AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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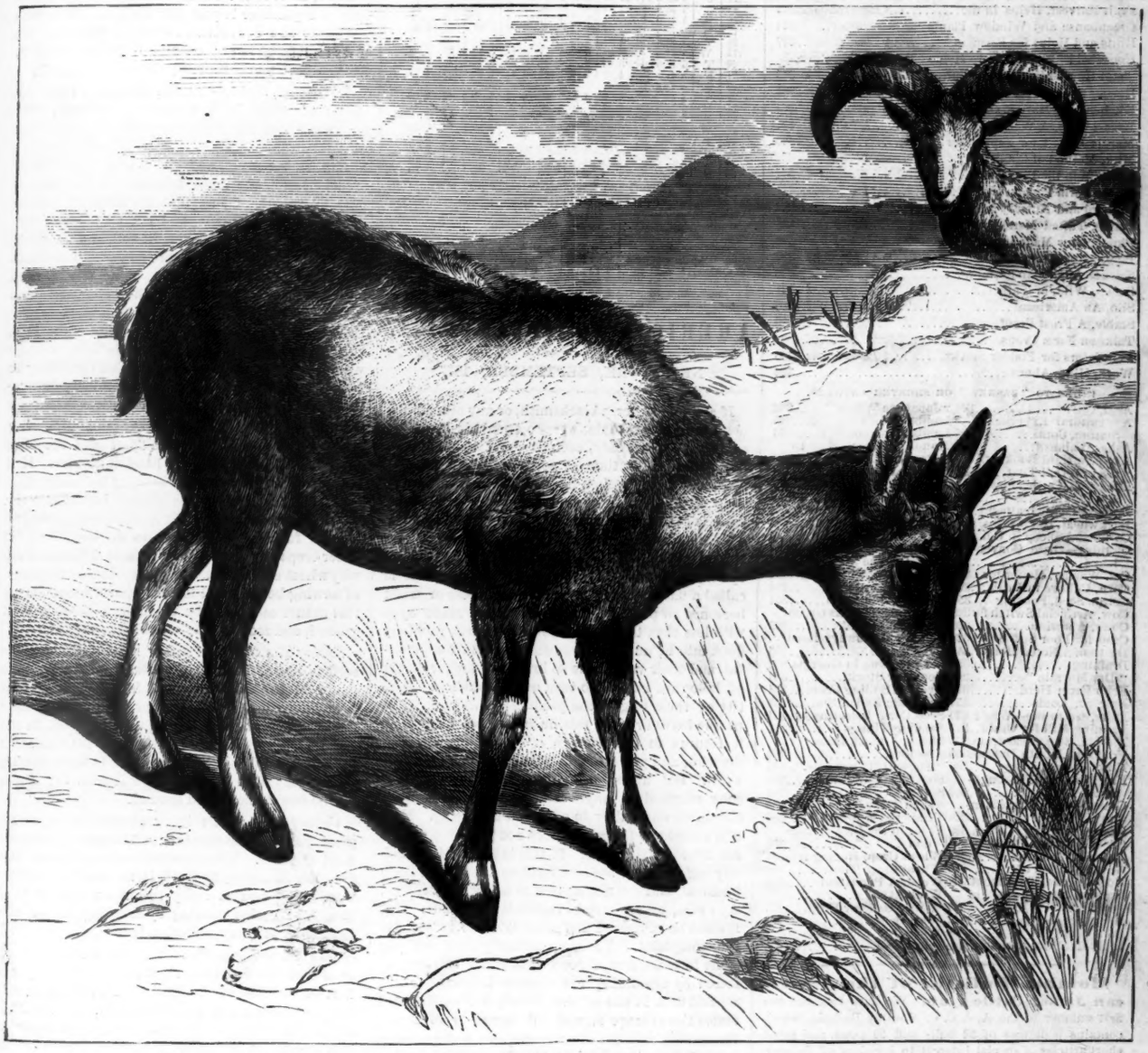

THE WILD SHEEP OF THIBET.—*Drawn and Engraved for the American Agriculturist.*

The head of the male sheep shown in the upper part of the above engraving, will very forcibly recall the head of our American "Big-horn," or Rocky Mountain Sheep. The species of sheep here illustrated, is a resident of Thibet, in Asia, and finds its home amid the precipices and peaks of the Himalaya Mountains. Its habits, in many respects, are not unlike those of our American wild sheep, and it affords an interesting instance of the natural adaptation of animal life to its surroundings and necessities, which has, in these widely separated localities, helped to produce animals of such similar form and peculiarities. To those who are acquainted with the habits of our Rocky Mountain Sheep, the following description of its Asiatic congener will seem familiar. This species is found upon the great snowy range of the Himalayas, in which the Ganges River finds its source, at very great elevations, from the highest limits of vegetation, down to the upper boundaries of the forests. It prefers the grassy slopes of these highest regions, and associates in flocks of four or five up to a hundred. It is a timid animal, ever on the watch, one of the flock keeping on the look-out for danger, and giving a shrill whistle of alarm on the appearance of an enemy. When upon rocky ground, it exhibits great agility in leaping from crag to crag of the wildest and seemingly most inaccessible precipices, and thus furnishes attractive sport to those hunters who delight in more than usually perilous adventure. In winter when snowed in beneath some sheltering cliff, it endures great privation, and when released from confinement, coming out wretchedly poor and emaciated, yet as agile as ever. The specimen shown in the foreground, is a female now living in the London Zoölogical Gardens, Regent's Park, where it was received about a year ago. We are indebted to the "London Field" for the excellent and accurate original of our illustration.

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Monthly Bulletin of the American Jersey Cattle Club.—We have received the first number of the A. J. C. C. Monthly Bulletin, which contains pedigrees of 52 bulls and 99 cows, and some short articles of special interest to breeders of Jerseys. This publication is to be issued monthly, under the supervision of Geo. E. Waring, Jr., Newport, R. I., Secretary of the American Jersey Cattle Club.

Deep Plowing of New Prairie.—"Winona," Minn. When prairie sod is plowed deeply, there are many roots of wild plants not cut off, but merely turned over. These sprout and grow again. The sod also does not rot so soon as when a thin furrow is turned over. But if the sod could be plowed with a double, or "jointer" plow;—a plow with one share and mold-board in advance of the other, so as to turn the sod the first, and then cover it with soil with the second one, grain might be sown at once. This might do for oats or buckwheat, but for wheat it would be risky.

Calendar for September.

Day of Month.	Day of Week.	Boston, N. England, N. York State, Michigan, Wisconsin, Iowa, and Oregon. Sun rises.	Sun sets.	Moon rises.	N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois. Sun rises.	Sun sets.	Moon rises.	Washington, Maryland, Virginia, Kentucky, Missouri, and California. Sun rises.	Sun sets.	Moon rises.
		H. M	H. M	H. M.	H. M	H. M	H. M.	H. M	H. M	H. M.
1	S	5 25	6 34	11 0	5 27	6 32	11 08	5 29	6 30	11 15
2	S	5 26	6 32	morn	5 28	6 31	morn	5 30	6 29	morn
3	M	5 28	6 31	0 8	5 29	6 29	0 17	5 31	6 27	0 23
4	T	5 29	6 29	1 26	5 30	6 28	1 32	5 32	6 26	1 37
5	W	5 30	6 27	2 48	5 31	6 26	2 53	5 33	6 24	2 57
6	T	5 31	6 26	4 10	5 32	6 24	4 13	5 34	6 23	4 16
7	F	5 32	6 24	sets	5 33	6 23	sets	5 34	6 21	sets.
8	S	5 33	6 22	6 47	5 34	6 21	6 48	5 35	6 20	6 50
9	S	5 34	6 20	7 11	5 35	6 19	7 14	5 36	6 18	7 17
10	M	5 35	6 19	7 39	5 36	6 18	7 43	5 37	6 16	7 47
11	T	5 36	6 17	8 10	5 37	6 16	8 16	5 38	6 15	8 22
12	W	5 37	6 15	8 47	5 38	6 14	8 54	5 39	6 13	9 1
13	T	5 38	6 13	9 33	5 39	6 13	9 41	5 40	6 12	9 48
14	F	5 39	6 12	10 27	5 40	6 11	10 35	5 41	6 10	10 42
15	S	5 40	6 10	11 27	5 41	6 9	11 33	5 42	6 8	11 40
16	S	5 41	6 8	morn	5 42	6 7	morn	5 43	6 7	morn
17	M	5 42	6 6	0 30	5 43	6 6	0 36	5 43	6 5	0 42
18	T	5 43	6 5	1 35	5 44	5 4	1 40	5 44	6 4	1 45
19	W	5 44	6 3	2 39	5 45	6 2	2 42	5 45	6 2	2 46
20	T	5 46	6 1	3 40	5 46	6 1	3 43	5 46	6 0	3 45
21	F	5 47	5 59	4 42	5 47	5 59	4 43	5 47	5 58	4 45
22	S	5 48	5 57	rises	5 48	5 57	rises	5 48	5 57	rises
23	S	5 49	5 56	6 5	5 49	5 56	6 7	5 49	5 56	6 10
24	M	5 50	5 55	6 26	5 50	5 54	6 29	5 50	5 54	6 34
25	T	5 51	5 53	6 52	5 51	5 52	6 56	5 51	5 52	7 1
26	W	5 52	5 51	7 23	5 53	5 51	7 28	5 52	5 51	7 31
27	T	5 53	5 49	8 2	5 53	5 48	8 8	5 52	5 49	8 16
28	F	5 54	5 47	8 53	5 54	5 47	9 1	5 53	5 48	9 8
29	S	5 55	5 45	9 55	5 57	5 45	10 3	5 54	5 46	10 10
30	S	5 55	5 43	11 7	5 56	5 44	11 13	5 55	5 44	11 20

PHASES OF THE MOON.

MOON.	D.	BOSTON. H. M.	N. YORK. H. M.	WASH'N. H. M.	CHA'STON H. M.	CHICAGO. H. M.
New M'n	7	8 16 mo.	8 4 mo.	7 52 mo	7 40 mo.	7 10 mo.
1st Quart	14	6 24 mo.	6 12 mo.	6 0 mo	5 48 mo.	5 18 mo.
Full M'n	22	10 50 mo.	10 38 mo.	10 26 mo	10 14 mo.	9 44 mo.
3d Quart.	30	1 36 mo.	1 24 mo.	1 12 mo	1 0 mo.	0 30 mo.

AMERICAN AGRICULTURIST.

NEW YORK, SEPTEMBER, 1877.

If a store-keeper, a blacksmith, or any other business man or mechanic, were to open his shop for one or two hours only, each day, and to spend the remainder of his time at some unproductive employment or recreation, he would soon shut up his shop altogether. A certain amount of productive labor is absolutely necessary to support every man. This amount is regulated by circumstances. These circumstances are beyond our control, but their operation is so certain, as to amount to what is called a natural law. When any business or trade becomes so profitable, that a living is made by it with less than the usual amount of labor, numbers flock into it, until the products become too plentiful, and their value falls so low, that longer hours of labor are needed to turn out a sufficient quantity of them to give the producer a living. Then people leave or avoid this business, and by and by it returns to the average condition of other industries, and gives a fair living for a fair day's work. But, under ordinary circumstances, if persons engaged in any business, do not perform a fair day's work, they do not get a fair living. Now it is complained, farming does not pay, that it does not afford a fair living. If this is true, it is especially unfortunate, because farmers are tied to their business, and can not leave it at a few days' notice. As a rule, we are certain that this is not true. But it must be confessed that there is some reason for the complaint. Farming certainly does not pay some farmers, and a good reason for this can be found by examining the Census Reports. There we find that in one of the principal New England States the average size of the farms is 76 acres; the average number of acres in grain and potatoes on each farm is only 2½ acres; the average number of cows on each farm is less than 3; and each cow takes 11½ acres to support her; there are less than two sheep to each farm; the same number of pigs, and little more than one horse. Each man engaged in farming cultivates only one acre and four-tenths in grains and potatoes, and 10½ acres in grains, potatoes, and grass. Now here is a case paralleled by that of a mechanic, who should only work a quarter of a day, instead of full time. If any sensible farmer were asked, if a man could support himself by such management, he would reply *No* emphatically, and without any hesitation. The condition of the State in question is similar to that of the rest of New England, and other parts of the country. It is clear then, that it can not be helped that there should be dissatisfaction with the proceeds of so ineffectually employed labor; it would be surprising, and farming would be different from any other business, if it were not so. The remedy is obvious. Work must be well and effectually done, or the pay is poor. A day's wages can only be earned by a day's work. The proportion or ratio between work and pay is fixed by laws, which no man, or combination of men, can suspend or abrogate.

Hints for Work.

Sowing Wheat.—The majority of farmers prefer to sow wheat this month. Where there is no danger of the fly, and where the season of fall growth is short, most of the wheat is sown in August. The 10th of September is probably the date which suits the ideas and convenience of most farmers. We prefer not to be later than this if we can avoid it. This subject was sufficiently treated last month.

Varieties of Wheat.—A great number of new varieties of wheat have been tested of late. The Clawson wheat has become very popular on account of its hardiness. It is a smooth variety, with a plump, amber grain, and yields well. The "Gold Medal" has made many friends, but we know it only by report. Of all that we have grown, the Treadwell, the Clawson, and the Diehl, have succeeded best on moderately light soil, and we would choose them in the order here named. The Diehl is a fine white variety, but the white wheats need better soil and cultivation than the amber, and these better than the red wheats. It is a good farmer that can raise good crops of the white sorts. But then every farmer should try for the best. On the whole, however, the amber wheats will probably be found the most successful under ordinary cultivation, and, as a rule, they make excellent flour.

Cultivating Wheat.—We are experimenting with wheat sown in rows 16 inches apart, and the rows to be worked with a Rue's hand-cultivator. If it will pay to cultivate wheat here, as it does in England, it will be done. The proper implement can be had without difficulty. A common grain drill can be furnished with hoes to do the work. If other crops pay for cultivation, it is difficult to say why wheat should not. It only needs that the mode of sowing be arranged to suit. An experiment of this nature can easily be made on a small plot of ground, and may be very valuable in its results.

Sowing Timothy; Harrowing Wheat.—When grass seed is sown, harrowing wheat can not be done either in the fall or spring. The benefit derived from harrowing in both seasons, is certainly greater than the advantage of having the grass seed in the ground before winter. When clover is to be sown in the spring, it will be much safer to defer sowing the timothy until then, and sow it with the clover on the freshly harrowed ground.

Cutting Corn.—This is, or should be, the next great work of this month. It is unwise to defer it until October. The extra value of well cured fodder, not damaged by frost, is no small consideration. The corn is ready to cut as soon as it is glazed. It gains nothing by standing longer and the fodder is always deteriorated.

How Corn May be Cut.—We were amused recently to read in a first-class English agricultural paper that our method of shocking corn in America, was to put three hills of corn in a stook. In the East 25 hills, or 5 rows of 5 hills in each row, are put into a stook. In the West 7 hills of 7 rows, or 49 hills, often go into a stook. We prefer the latter, as it is a saving of time and space, and is especially preferable when the corn stubble is plowed and sown to wheat or rye. We prefer too, to bind the corn in sheaves, and set up the sheaves in a stook, binding the top of the stook with a stout straw band. The sheaves are necessary if the corn-husking machine is used, and very handy in case the corn is hauled to the barn to be husked.

Curing Corn-Fodder.—Corn-fodder should be bound in small sheaves, and these should be set up in stooks open at the bottom to admit plenty of air. Rain can not injure fodder thus cured. But if set

close, rain that may reach the inside, will not dry, but will cause mold and injure the fodder.

Plowing Corn-Stubble.—When fall grain is sown upon corn-stubble, the stooks should be as wide as possible. The plan of binding in sheaves, will then be found very convenient, as the stooks may readily be set up 14 rows apart, or 7 rows on each side of each row of stooks. This will give nearly 40 feet of plowed ground in each strip, and leave very little space to be plowed afterwards. Then, if the ground is plowed by throwing the first furrows lightly towards the stooks, and finishing by an open furrow between them, the strips left may be plowed by throwing the furrows to those first made, again lightly, and finishing by a dead furrow in the middle. Then the ground will be left in lands 21 feet wide, a width, nearly 10 paces, that is usually given to the lands.

Thrashing Wheat.—When it is convenient, it is far the best plan to thrash wheat early. When put into the barn, it always undergoes a process of "sweating." This is caused by the water contained in the grain and straw, and which cannot all be dried out in the field, but which is evaporated by the process of heating and "sweating." The barn should be thoroughly ventilated during this process, and the doors thrown open every fine day, especially when a breeze is blowing. After this sweating has occurred, the grain thrashes easily, and may then be put away into the granary safely

The Straw is too valuable to be used for litter. Plenty of material can be procured for this purpose which costs nothing, and is good for nothing else, such as leaves, coarse grass, weeds cut before they blossom or seed, sand, dry earth, swamp muck, etc. These should be gathered in good time, and stored under cover or protected from the rain.

Digging Potatoes.—Potatoes should be harvested in good time, and put away in pits lightly covered. It is a good plan to sort the potatoes when picking them up, and thus save another and unnecessary handling. Keep the different sizes separate.

Clover Seed.—The second crop of clover for seed, may be cut with a mower, and gathered upon a frame, made of light strips of wood, or iron rods, to which a piece of canvass is sewed, and fastened to the cutter-bar by two bolts. The clover gathered upon the cloth can be raked off by a boy following with a wide hay-rake. The straw and chaff are useless for hay, and are not worth the trouble of preserving from the weather, but will make excellent litter for farrowing sows. To be wetted and dried two or three times, causes the seed to hull easily.

Fattening Animals.—It is now time to begin to fatten swine, sheep, and beeves intended for the market. The more of this work that can be done, the better for the farm and the farmer. We would purchase as many head as we could feed, and buy bran, corn-meal, oil-meal, or any other products of this character to be procured. If stock were bought with judgment, and fed with skill, they should bring in a handsome money profit, and leave a large quantity of valuable manure.

Cows.—Fresh milk cows should be liberally fed. If they fall off now, they can not be brought up again when colder weather comes. Failing pastures should be helped out with some fresh fodder, bran, or meal. Look out for injurious weeds in clover aftermath, such as lobelia and St. John's wort. When plentiful, these may cause fatal disease in cows, as we have known them to do with horses and colts. The presence of these weeds is indicated by profuse salivation or slobbering in the animals that have eaten them.

Sheep.—The breeding flock should now be put in order, culled over, and liberally fed. Half a pint of grain, per head, daily, given now, will help to bring the ewes in season early, and insure strong lambs, if good care is kept up through the winter. Separate all the ram lambs from the ewes, and keep the ewe lambs by themselves. Now that good mutton is becoming more popular in the markets, it would be well to consider the merits of the long wools as profitable sheep.

Whitewash.—There is no more healthful mode of cleaning stables, pens, and sheds, than to give them a good coat of hot lime-wash. An easy mode of doing this, is to make a barrel of the wash by slacking a bushel of fresh lime in a pork or other tight barrel, with only water enough to make a thick paste. When the lime is thoroughly slacked, fill up with boiling water, and let it stand six hours. Then take one of the Fountain Pumps described in the *American Agriculturist* for May, 1877, and spatter the walls with the wash, until every corner is covered. The lime that falls upon the floor will not be wasted, it will help to sweeten the place.

Sundry Matters.—Look out for the insurance on barns and stock; do not let the policy expire without renewing it; and by all means choose a responsible company to insure with....Clean out and whitewash cellars and root-houses....Remove rubbish from back yards and gardens....Repair fences. ....Open drains....Repair the corn-crib....Hunt out vermin and do all those things which need to be done to have all snug for the winter. Keep an observant eye open, and carry a note-book and pencil with you. It will be surprising how many things will be written down in it in the course of a few days.

Notes on Orchard and Garden Work.

This month is the orchardist's and gardener's harvest time—not so much for the ingathering of fruit and other crops, but for the collecting of the experience of others, and the harvesting of information that shall be of use hereafter. This is eminently the month of fairs and exhibitions. Besides the special horticultural shows, the State fairs, and in many cases the local or county fairs, have a special department for garden and orchard products, and the cultivator may properly give up a good share of this month to attending these gatherings—not altogether as a matter of recreation, but as an investment for profit. The profit we refer to is not that which comes in the shape of premiums awarded to the articles he exhibits, for while it is a laudable ambition to carry off as many as possible of these, this should not be the sole, or even the leading motive for attending the fairs. The principal profit comes from seeing what others are doing, seeing new varieties of fruits, vegetables, etc., in examining new implements, and above all, in meeting with other cultivators, and in talking with them as to their ways and methods. The successful men are generally enthusiasts in their pursuit, or, as often said—"ride hobbies." Such men are willing and glad to talk with others engaged in similar occupations, and it is hardly possible for a wide-awake man to visit even an ordinary fair, without learning something that he can turn to a useful account. Making the acquaintance of a variety of fruit or vegetable, that in earliness or other quality, is superior to that we now cultivate, will often put one on the road to prosperity.

But one should visit the fairs to show, as well as to see. If every one held back, because he felt sure that some one else would have something better, there would be no show at all. It is very disgusting to the managers of a fair—as we know from experience—to be told by a visitor: "I've got at home better grapes, (cabbages, or whatever,) than any I see here."—If you have made a mistake in not exhibiting, do not say anything about it, but resolve to do better next year. The proper course is, to show the best you have from the orchard or garden, and if others have better, try to learn the cause of the inferiority of your own.

This is the gala year of the fruit growers, as the biennial session of the American Pomological Society will be held Sept. 12th to 14th at Baltimore, Md. This is an association which every fruit-grower can, and which every one, large or small, should join. The work of the Society consists in recording new fruits, and in cataloguing the success of varieties in the different States. Besides this, and quite as important, are the opportunities for social intercourse, and the great advantages that come from personal acquaintance with fruit-growers from every State and Territory in the Union. We strongly urge all engaged in fruit culture, whether as amateurs or as a business, to connect themselves with this very useful National Society.

Orchard and Nursery.

The general failure of the fruit crop in England, indicates good prices for shipping varieties, especially of apples. American apples have established an excellent reputation in England, and meet with ready sale. Formerly the shipments were confined to a few hundred barrels of Newtown Pippins, but now Baldwins, Northern Spys, Spitzenberg, and other well-keeping and high flavored varieties are sent, in large quantities.

Marketing Autumn fruit, while less risky than that of the earlier varieties, requires care, and it is more likely to be picked and packed in too mature, rather than in a too unripe condition. Whatever the variety of apple or pear, it should always reach the market in a firm condition. Over-ripe fruit will bruise, and the sale is ruined. Sufficient is said last month and the preceding on the details of Marketing. See article on the Peach Harvest, in August, and on Orchard Helps, in the present issue.

Cider Making.—If any considerable portion of the crop is to be made into cider, to be disposed of as such, or converted into vinegar, the ways and means should be considered well before hand, and grinder, press, barrels, and the needed store-room be all in readiness. Presses of the capacity of a few bushels, up to those that work up 800 bushels a day, may now be had. An account of a powerful press was given in July last. Those who make nearly their whole crop of apples into

Vinegar, find it profitable to have a small press to work up the windfalls every few days. This both prevents the increase of insects, and utilizes for vinegar what would otherwise go to waste.

Drying Fruit, for family use or for sale, is sufficiently discussed in an article on page 338.

Budding will continue until the sluggish growth renders the stocks unfit. Full notes were given last month. Do not omit to examine the budded trees, as there directed, and cut the ties at the proper time. If the stocks are in good condition, the failures may be rebudded.

Seeds of Stone Fruits, peaches, plums, and cherries, need be kept from drying too much, and in a cool place. Mixing with a plenty of sand, is the best treatment. The notion that stones from "natural," or unbudded peach trees only, should be used to raise stocks, is founded upon the fact that such trees are generally healthy, but some experienced planters use stones from the best peaches, provided they are from healthy trees.

Preparing for Fall Planting.—Except in northern localities, where the season is brief, fall has several advantages over spring as a season for planting. Not only is the soil in better condition, but there is more time to devote to the work, which is likely to be more thoroughly done, and the season is more favorable for the taking up and the safe transportation of trees. If the planting is not to be done until spring, it is better to prepare the land by manuring and plowing in the fall.

Fruit Garden.

Excepting the grape vines and fruit trees, the plants have yielded their crop, and should now be treated with reference to next year's fruiting.

Fall Planting is as desirable here, for most things, as it is in the orchard, and for the same reasons.

Blackberries and Raspberries, especially, are better set in the fall, as they push underground shoots very early in the spring, and growth is apt to be well advanced before it is suspected. Keep the canes and branches shortened, as directed last month.

Currants and Gooseberries should be pruned as soon as growth ceases and the leaves fall, and cuttings for new plants put in. If these are set in the fall, they will often be rooted by the time the ground freezes.

Strawberries.—While there is nothing to be gained in the time of bearing by setting in the fall, it is often a more convenient, and always a pleasanter time for the work, but in northern localities the plants do not get sufficiently well established, and are liable to be thrown out by the frost, hence fall

planting is not advisable, where the climate is any more severe than that of New Jersey.

Blackcap Raspberries and the red-fruited varieties of the Purple Cane class, are propagated from the tips of the long and slender shoots, which naturally arch over and reach the ground for that purpose, hence where plants are wanted, a sufficient number of these branches to supply them should be allowed to grow unchecked. When they reach the ground, their striking root may be favored by placing a little earth upon the ends; only enough should be put on to prevent them from being moved by the wind; too much may cause the green tip to decay.

Grapes which have gone on prosperously until just ready to color, are sometimes attacked by mildew, and can only be saved by the free use of sulphur, which should be applied with care, to secure a very fine but even dusting. If carelessly applied, the sale of the fruit will be injured. Grape scissors are made which hold the bunch by the stem after it is severed from the vine; the use of these avoids handling the clusters, which, however carefully done, will remove some portion of the bloom.

Pears, almost without exception, are better for ripening in the house. If the stem parts readily from the tree, when the fruit is lifted, it is time to gather and place on shelves in the fruit room, or in shallow boxes, where its condition may be watched. Laid between the folds of a blanket, pears will often color up finer than by any other treatment.

Kitchen and Market Garden.

The condition of many gardens this month shows an utter disregard of neatness, and a shameful amount of waste. The refuse of a family garden of moderate size, will go far towards the keep of a cow, and still further towards that of a pig. If neither of these animals is at hand, to utilize a share of the refuse and turn the rest into manure, there should always be a compost heap to receive them. By thus disposing of the rubbish, the garden may be kept in as good order now as at any season.

Cabbage and Cauliflower seed, for plants to be wintered over in cold frames, is sown this month. It is important to do this just at the proper time; if the sowing is made too early, the plants will get too large, and when planted out in the spring, instead of forming good heads, will tend to push flower-stalks and run to seed. On the other hand, if sown too late, the growing season will not be long enough to allow them to get sufficiently strong to pass the winter safely. The market gardeners near New York find the proper time limited to within a few days either way, of Sept. 15th. To have the plants in the proper condition, careful gardeners make two sowings, each time using seed enough for a full supply. Some sow on the 10th and 20th, and others on the 12th and 16th, on a carefully prepared and enriched seed-bed in the open ground, and the plants are usually ready to be "pricked out" in the frames in four weeks from the sowing. In more northern localities, this must be done earlier, and in more southern ones, later.

Lettuce is another plant which, for the earliest spring crops, is wintered over in the same manner, and the seed is sown at the same time with those of cabbage and cauliflower. The Simpson, a subvariety of the Silesia, is a favorite sort for this purpose, and the Black-seeded Butter.

Borecole, or Kale, usually known in the market as "Sprouts," is a kind of cabbage that does not head; the variety most in use is known in the seed-stores as "Dwarf German Greens." The seed is sown, near New York, at the end of August or early this month, in rows 15 inches apart. When 2 inches high, they are thinned, by cutting out with a push-hoe, to 6 or 8 inches, and kept clean. If the plants have not spread enough to cover the ground, a light covering of salt-hay or straw is given, but if they are large enough, no covering is put on them. It is ready for use in May.

Spinach may be sown for both fall use and to keep through the winter. It should not be sown later than the middle of the month, in drills 12 or 15 inches apart. The crop is to be kept clean as long as the frost keeps off, and when large enough, it is carefully thinned, and the thinnings used; this gives the plants that are to remain more room, and they grow strong and able to stand the winter. In the market gardens it is not often covered, but we think it comes out better in the spring to cover slightly with marsh hay.

Corn Salad, or Fetticus, the green leaves of which appear very early in the markets, and much used, especially by Europeans as a salad, is sown and treated in all respects like spinach, but it is necessary to give it some protection.

Turnips of the flat kinds may still be sown, and in favorable seasons will make a crop, even if sown as late as the 10th or 20th.

Growing Crops should now be coming on finely, especially those that, like celery, late cabbage, rutabagas, etc., flourish best when the nights are cool and the days warm. They should be encouraged by frequent use of the hoe and cultivator.

Sweet Potatoes need little other care than an occasional moving of the vines, to prevent them from taking root.

Melons are ripe when the stem easily parts from the fruit; the ripeness of water melons can only be judged by the sound when struck with the finger, a sound which can not be described, but is soon learned. It is well to remove all the fruit not likely to mature; the young musk-melons may be used for stuffed pickles or "mangoes."

Shallots, the young bulbs of which are used in spring as a substitute for onions, are hardy, and may be set this month.

Pickling and Preserving.—Cucumbers need picking every day or two. Martynias must be taken while very tender. String and Snap Beans are prepared as if for cooking, and put down in salt. Green corn, of proper size for eating, is boiled, cut from the cob and dried; it is sometimes cut from the cob raw, and salted. Green tomatoes should be secured for pickling before frost injures them. Winter Cherries or Strawberry Tomatoes drop when ripe; they may be gathered and used for sweetmeats at once, or spread in an airy place to be used when all are gathered. Make tomato catsup while the fruit is still in perfection and plenty.

Clear up the ground as soon as a crop is off. Manure, spade, and have it ready for spring....As soon as sweet corn is gathered, cut up the stalks and cure them for fodder....Look out for late weeds, and do not put seed-bearing ones on the manure heap, but burn.

Flower Garden and Lawn.

The excessive heats of summer being over, the late flowers now have their opportunity, and the borders should be bright until frosts come.

Dahlias, besides a strong stake for the main stem, often need shorter ones for the principal branches, else the weight of bloom may cause them to break away at the junction with the stem. Grasshoppers often injure their flowers, and those intended for exhibition must be protected by netting. Cut away the blooms as soon as past their prime, and remove all buds that show malformation.

Chrysanthemums, from their great beauty and variety, are not in such general cultivation as we should suppose; they are generally hardy, and though they flower so late that the frosts catch them in their prime, they stand up to their work until the very last, and as the rear guard, nobly cover the retreat of the floral army. But one can pot as many as he chooses, and thus enjoy their bloom for some weeks. As soon as the buds are fairly developed, pot them, give shade for a few days, and when the increase in size of the buds shows that they have recovered, give very weak manure water, or a teaspoonful of guano to the gallon of water. They will bloom more satisfactorily in a sunny window of a room without fire.

Chrysanthemum Troubles are numerous; sometimes a black aphis or plant louse will completely cover the ends of the branches—strong Tobacco Water. They also are the favorite food of several hairy caterpillars, several of which may be found disfiguring the foliage of one plant—hand-pick. Then the stems will break on the slightest provocation, especially when heavily loaded with buds—sticks and strings, and a plenty of them.

Violets, if wanted in late winter or early spring, must be provided for now. Prepare a frame with very rich soil, and set healthy young plants from runners. When freezing weather comes, cover the plants with leaves and put on the glass. In February remove the leaves, and flowers will soon appear.

Hardy Herbaceous Perennials are mostly through with flowering, and may be divided and reset. Those which form a large clump of fine roots, may be divided by the use of a sharp spade, but those with large roots need more care; shake or wash away the soil so that the whole may be seen, and divide, using a strong knife, so as to leave each bud with a share of the root. The present is a favorable time to procure and set new plants of this class, as some flower too early for successful removal in spring.

Lawns, as the cooler weather encourages the growth, may have more frequent mowings. Sow seeds on thin spots.

Insects.—Ornamental trees are apt to be disfigured by the Fall Web-worm, which is easily removed.

Greenhouse and Window Plants.

As any sudden change next month may make it necessary to house tender plants, no time should be lost in having all in readiness. See that the heating apparatus needs no repairs. Paint, glaze, and repair generally.

Plants for Winter, whether for blooming or for keeping over, should be looked out for this month. Propagate verbenas, geraniums, and others that are in the open ground. Young and vigorous plants are always better than old and misshapen ones.

Hanging Baskets and flower-stands for winter should be filled early, that they will be well established by the time cool weather comes.

Soil, Pots, and other needed articles, should be got ready in good season, and stored for winter use.

Sand upon the greenhouse benches should be renewed, not only for appearance, but to get rid of various animal and vegetable pests.

Bulbs for early winter blooming should be procured as soon as the dealers offer them.

Planting Deciduous and Evergreen Trees and Shrubs in the Fall.—We have frequently advocated the fall planting of most fruit trees at this season, and for the same reason we prefer this season for deciduous ornamental trees and shrubs in all mild climates. While there is but little difference of opinion as to the propriety of setting in autumn, the hardy trees that drop their leaves then, there is no subject upon which tree planters differ more than the proper time for planting evergreens. Some do this in early spring, while others prefer to wait until growth is about to start, and while some entirely disapprove of fall-planting, others find it one of the most favorable seasons. This diversity tends to show that success will follow planting at either season, if proper care be taken. Messrs. Saml. B. Parsons & Sons, whose experience in such matters has been very large, inform us that they sell many evergreens to be set in the fall, and if the planting be done in early autumn, when the ground is warm and mellow, and in localities where the season is long, we have no doubt that the result will be satisfactory. Messrs. Parsons & Sons, of Flushing, N. Y., have a very large and remarkably varied stock of this class of trees, including some that are very rare, and not to be generally found. There is too much sameness in the selection of evergreens, and, indeed, other trees for planting, and those who set trees that will ultimately grow large, on small places, make a great mistake; there is a number of low growing forms, well suited to small places, and which will never reach so large a size, as to make it necessary to cut them out, because they crowd one another, and shut out the light and rain. The better way for one who wishes to plant, and does not live too far away, is to visit Kissena Nurseries, where specimen trees may be seen, and make selections on the spot; or if unable to do this, send for Parsons & Sons' descriptive catalogue, as above. The stock of evergreens is perhaps unrivalled, and the collection of ornamental deciduous trees and shrubs unusually fine.

A Liberal Offer is made by the Publishers of the *American Agriculturist*, of New York City, viz., to send the paper free for the rest of this year, to all new subscribers sending in their subscriptions for 1878 during September, whether at the single rate of $1.60 a year, or in clubs of two at $1.50 each, or three at $1.40 each, etc.

THE AMERICAN AGRICULTURIST FOR SEPTEMBER 1ST comes to hand, freighted, as usual, with much useful, practical information for all classes, illustrated with about 50 original engravings. Among these are: an important article on the value and use of ashes; plans, description, and details of cost of a $5,000 country house; valuable new breeds of poultry, with illustrations; "Among the Farmers" treats of the value of harrowing growing crops, wheat, etc., and other useful topics; "Walks and Talks" discusses the increasing value of the rye crop, wheat culture, etc.; "Silos," or the new and valuable method of keeping corn-stalks for winter-feeding, is discussed and illustrated; a new Grashopper Trap, several labor-saving contrivances, are described and engraved; easy new method of cooling milk, which is of importance; new fruit-dryer; saving animals with broken legs; new plants, with fine engravings; contrivances to help fruit-gathering; "Notes from the Pines" giving experiences in the garden, etc., with a plea for native lilies; the household gives "Faith Rochester's" common sense talks with her sister compeers and their daughters; house step-ladders; using tomatoes; the Youngsters are well cared for, entertained, and instructed in their department; the Work on the Farm, in the Garden, Orchard, etc., for September, is laid out with many practical hints; a list of the time and place of some hundreds of Fairs; Humbugs catch it in several columns. Ogden Farm Papers, and a hundred or so of short articles fill up the ample pages. Those subscribing in September, get the paper 15 months for a single year's subscription price. ORANGE JUDD COMPANY, New York, Publishers.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, from our daily record during the year, show at a glance the transactions for the month ending Aug. 12th, 1877, and for the corresponding month last year:

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
27 d's *this* m'th	221,000	2,476,000	2,931,000	67,000	206,000	1,042,000
25 d's *last* m'th	267,500	2,541,000	3,104,000	79,000	197,000	1,281,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
27 d's *this* m'th	383,000	2,906,000	6,113,000	357,000	168,000	1,296,000
25 d's *last* m'th	354,000	2,605,000	4,216,000	119,000	225,000	1,269,000

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
27 days 1877	221,000	2,476,000	2,931,000	67,000	206,000	1,042,000
26 days 1876	305,000	2,451,000	2,060,100	112,000	65,000	1,015,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
27 days 1877	383,000	2,906,000	6,113,000	357,000	168,000	1,296,000
26 days 1876	412,000	2,634,000	3,107,000	39,000	——	1,104,000

3. *Stock of grain in store at New York.*

	Wheat. bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Malt.* bush.
Aug. 6, 1877	162,325	320,094	22,615	11,595	576,090	252,861
July 9, 1877	418,655	368,858	39,828	92,434	925,153	245,632
June 11, 1877	521,308	320,643	206,815	91,846	836,054	296,129
May 7, 1877	761,686	468,809	193,046	174,375	347,881	291,654
Feb. 7, 1877	3,083,819	2,302,261	374,142	671,114	956,114	388,605
Jan. 8, 1877	3,668,010	3,077,504	341,750	905,615	1,088,104	425,406
Dec. 11, 1876	3,110,283	3,385,554	218,941	873,310	1,182,822	512,041
Aug. 7, 1876	2,831,299	904,557	94,960	53,914	1,232,895	434,208
Apr. 10, 1876	3,393,074	232,140	68,429	200,381	706,282	436,942
Jan. 10, 1876	5,802,293	663,982	100,741	325,191	1,080,300	307,438

4. *Exports from New York, Jan. 1, to Aug. 8.*

	Flour. bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Peas.* bush.
1877	662,300	5,123,400	12,997,100	835,000	842,100	97,100	153,400
1876	1,164,721	11,573,520	8,844,000	691,070	28,100	362,000	455,987
1875	1,129,041	14,030,208	7,225,590	120,163	165	25,147	229,589
1874	1,365,480	25,290,750	14,5 3,411	531,001	320	72,311	263,883
1873	791,998	9,278,612	7,669,335	327,970	19,226	20,839	92,496
1872	547,794	5,479,949	14,572,323	510,678	22,666	29,706	123,093
1871	1,095,079	10,556,653	6,341,082	71,399	81,797	16,764	——
1870	1,069,227	10,236,357	220,647	65,734	——	11,205	——
1869	812,764	9,099,803	1,537,077	72,811	——	42,727	——
1868	575,091	3,209,204	4,903,873	158,073	——	40,643	——

5. *Tide-water Receipts at Albany, from opening of navigation to Aug. 7th:*

	Flour. bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Malt.* bush.
1877	3,100	1,534,700	8,385,100	192,900	389,700	960,300	277,500
1876	13,700	7,597,500	2,565,000	327,000	114,500	1,791,200	365,500
1875	27,200	7,504,600	1,932,200	68,700	——	1,023,200	456,500
1874	35,100	11,590,000	9,795,200	189,800	74,100	1,216,700	356,300

CURRENT WHOLESALE PRICES.

	July 12.	Aug. 13.
PRICE OF GOLD	105 3-8	105 1-4
FLOUR—Super to Extra State	$5 50 @ 7 25	$4 65 @ 6 40
Super to Extra Southern	5 65 @11 25	4 75 @ 9 50
Extra Western	6 25 @11 25	5 50 @ 9 50
Extra Genesee	7 25 @ 9 25	6 00 @ 8 25
Superfine Western	5 50 @ 6 40	4 65 @ 5 35
RYE FLOUR	4 25 @ 5 25	4 00 @ 5 10
CORN-MEAL	2 65 @ 3 55	2 85 @ 3 50
WHEAT—All kinds of White	1 85 @ 2 15	1 40 @ 1 60
All kinds of Red and Amber	1 00 @ 2 00	1 00 @ 1 55
CORN—Yellow	60 @ 64	61 @ 63
Mixed	57 @ 61	54 @ 60½
White	60 @ 67	62 @ 70
OATS—Western	32 @ 58	27 @ 48
State	56 @ 63	45 @ 55
RYE	72 @ 95	65 @ 87
BARLEY	50 @ 1 10	50 @ 90
BARLEY MALT	70 @ 1 30	75 @ 1 35
HAY—Bale, ₱ 100 lbs	55 @ 95	60 @ 1 00
STRAW, ₱ 100 lbs	45 @ 70	30 @ 70
COTTON—Middlings, ₱ lb	12¾@ 12¾	11½@ 11¾
HOPS—Crop of 1876, ₱ lb	5 @ 14	4 @ 12
" old, ₱ lb	2 @ 8	2 @ 6
FEATHERS—Live Geese, ₱ lb	35 @ 45	35 @ 45
SEED—Clover, ₱ lb	Nominal.	Nominal.
Timothy, ₱ bushel	1 85 @ 2 00	1 75 @ 1 90
Flax, ₱ bushel	1 65 @ 1 75	1 50 @ —
SUGAR—Refi'g & Grocery ₱ lb	8¼@ 10¾	7¾@ 9¾
MOLASSES, Cuba, ₱ gal. 50 test	42 @ 43	35 @ —
New Orleans, new crop, ₱ gal	45 @ 58	40 @ 55
COFFEE—Rio (Gold)	17 @ 20¾	16¾@ 20¾
TOBACCO, Kentucky, &c., ₱ lb	4 @ 17	4 @ 17
Seed Leaf, ₱ lb	4½@ 50	4½@ 50
WOOL—Domestic Fleece, ₱ lb	32 @ 55	35 @ 55
Domestic, pulled, ₱ lb	20 @ 42	22 @ 45
California, spring clip	13 @ 35	13 @ 32
California fall clip	10 @ 25	10 @ 25
TALLOW, ₱ lb	7¾@ 8¾	8 @ 8¾
OIL-CAKE—₱ ton	34 00 @34 50	25 00 @25 50
PORK—Mess, ₱ barrel	14 35 @14 40	13 90 @14 00
Extra Prime, ₱ barrel	10 00 @10 50	9 00 @10 75
BEEF—Plain mess	11 00 @12 00	11 00 @12 00
LARD, in trcs. & bbls, ₱ 100 lb	8 25 @10 00	7 37½@ 9 75
BUTTER—State, ₱ lb	12 @ 23	14 @ 27
Western, poor to fancy, ₱ lb	9 @ 22	11 @ 26
CHEESE	8 @ 9¾	8 @ 10¾
BEANS—₱ bushel	2 25 @ 3 50	2 30 @ 3 60
PEAS—Canada, in bond, ₱ bu	93 @ —	83 @ 85
Eggs—Fresh, ₱ dozen	14½@ 17½	14 @ 18
POULTRY—Fowls & Chickens	10 @ 18	10 @ 15
Chickens, spring, ₱ lb	20 @ 24	12 @ 18
Turkeys—₱ lb	10 @ 16	12 @ 16
Geese, ₱ pair	1 12 @ 1 20	1 25 @ 1 50
Ducks, ₱ pair	60 @ 1 00	50 @ 1 00
Roosters, ₱ lb	6 @ 7	6 @ 8
PIGEONS, wild, ₱ dozen	1 25 @ 1 50	— @ —
SQUABS, per dozen	50 @ 1 00	— @ —
TURNIPS ₱ bbl	— @ —	40 @ 50
" ₱ 100 bunches	1 50 @ 2 00	1 00 @ 1 37
CABBAGES—₱ 100	2 00 @ 6 00	1 12½@ 3 50
ONIONS—new, ₱ bbl	2 75 @ 3 00	1 50 @ 2 50
" ₱ crate	1 00 @ 1 50	— @ —
LETTUCE, ₱ bbl	50 @ 1 00	37 @ 60
POTATOES—new, ₱ bbl	1 50 @ 5 50	1 00 @ 1 50
TOMATOES, new, per bush	1 00 @ 2 50	25 @ 40
BEETS, ₱ 100 bunches	1 50 @ 2 25	1 00 @ 1 50
STRING BEANS, ₱ bag	50 @ 1 00	50 @ 62½
CUCUMBERS, ₱ bbl	— @ —	40 @ 65
BROOM-CORN	4 @ 8	4 @ 8
GREEN CORN, ₱ 100	— @ —	30 @ 60
GREEN PEAS, ₱ 2 bush bag	— @ —	50 @ 1 25
WHORTLEBERRIES, ₱ bush	2 75 @ 3 50	1 50 @ 2 00
APPLES—₱ barrel	1 25 @ 4 50	1 50 @ 3 50
SQUASH, ₱ bbl	— @ —	50 @ 1 00
PEANUTS, domestic, ₱ bush	1 20 @ 1 50	— @ —
Melons, per 100	— @ —	8 00 @25 00
" ₱ bbl	— @ —	1 25 @ 2 50
PEARS, ₱ bbl	— @ —	1 50 @ 4 50
PEACHES, ₱ crate	1 00 @ 3 50	40 @ 3 50
CURRANTS, ₱ lb	6 @ 10	5 @ 8
BLACKBERRIES, ₱ qt	8 @ 15	7 @ 10
PLUMS, ₱ bush	— @ —	2 50 @ 4 00

Gold has been up to 106⅛, and down to 105, closing Aug. 11, at 105¼, as against 105⅝ on July 12; 104⅞ on June 12; 107¼ on May 12; 105⅝ on April 12; 104⅝ on March 12; 106 on January 12; 107¼ on Dec. 12, 1876, and 111½ on the 14th of August, 1876 ... Very material reductions have occurred during the month in the prices of most kinds of domestic produce, notably so in Breadstuffs, Fruit, and Vegetables, influenced by the liberal offerings of the new crop.... The course of Breadstuffs nearly all through has been downward. The foreign market advices have been of an adverse tenor, tending to impede the export movement. The stronger range of ocean freights has been also against this interest. The home trade requirements have been on a moderate scale. Flour (of the new crop) and new Wheat have been offered much more freely, the Wheat largely of new crop winter, to arrive in August and September, and sellers have been eager to place supplies, leading to a marked decline in values. The new Winter Wheat thus far shown here, has been of superior quality. A few samples of new crop Spring Wheat have likewise been exhibited, including one of No. 2 Chicago, which averaged 61¼ lbs. to the bushel. Corn has been in better supply, and depressed in price, though on an active trade, largely in options for August, September, and October deliveries. Much of the Corn of recent receipt here, was "out of order," and had to be sold at low figures. Included in the recent export purchases of corn, have been several cargoes for shipment to Italy, of which were two cargoes of distilling Corn @ 54 cts. ₱ bushel. Rye has yielded in price, and has been fairly active at the ruling quotations, especially No. 2 Western, for export to the Continent. Two or three boat-loads of new crop State have been sold, to arrive soon, at 86c. Barley dull; feed stock only meeting with inquiry of moment, and this for shipment to the United Kingdom. New crop six-rowed State Barley offering to arrive at 90, with 80@81 bid. Oats less sought after, and much cheaper. Several lots of new crop Western have been sold, mostly to arrive.... Cotton has been quoted lower, on a restricted movement.... Hay quiet, and Hops slow of sale within our range.... A fair inquiry has been noted for Tobacco, in good part for export, at unchanged figures.....Provisions have been in less demand, and generally quoted weaker in price... Rice has been in more request, and quoted strong.... Groceries quiet; Sugars and Molasses fell off decidedly in values ... Wool attracted less attention, and closed in favor of purchasers under more liberal and urgent offerings.... New crop Flax-seed has been recently quite freely purchased for August and September delivery, (reported to the extent of 100,000 to 125,000 bushels), on the basis of $1.50 ₱ bu., for crushers' use, thus formally opening the new season. ....Other seeds very dull as yet; quoted irregular.... Ocean freights have been fairly active, and at the close, higher for Grain; otherwise firm.... Grain rates by steam to Liverpool closed on the 11th of August at 8@8¼*d.*; to Glasgow at 5*d.*; to London at 8*d.*; to Liverpool, by sail, 7@7¼*d.*; London, by sail, 6¾@7*d.*, per bushel. Provisions by steam to Liverpool, 40*s.* @ 55*s.* per ton; Cotton by sail and steam at ¼*d.* ₱ lb. Grain, by sail, for Cork and orders, at 5*s.* 9*d.* @ 6*s.*, and to Danish ports, 6*s.*@6*s.* 3*d.*; Italian ports, 5*s.* 9*d.* @ 6*s.* per quarter. The railroad strike was severely felt by receivers and forwarders of produce.

New York Live-Stock Markets.

RECEIPTS.

WEEK ENDING	*Beeves.*	*Cows.*	*Calves.*	*Sheep.*	*Swine.*
July 23	8,383	61	3,686	18,572	16,296
July 30	7,028	66	4,167	21,389	7,345
Aug. 6	12,719	34	3,175	22,082	17,886
Aug. 13	7,539	83	3,222	30,088	21,064
Total for 4 Weeks	35,671	244	14,250	92,731	62,591
do. *for prev. 5 Weeks*	50,590	390	21,646	120,121	102,067
	Beeves.	*Cows.*	*Calves.*	*Sheep.*	*Swine.*
Average per Week	8,908	61	3,562	23,178	15,898
do. do. *last Month*	10,118	78	4,329	24,024	20,413
do. do. *prev's Month*	6,745	65	4833	20,668	20,261

The prices for the past four weeks were as follows:

WEEK ENDING	*Range.*	*Large Sales.*	*Aver.*
July 23	9½@13¾c.	9½@ 13c.	11¼c.
July 30	9 @14½c.	10¼@12¾c.	11¾c.
Aug. 6	8 @13 c.	9 @12 c.	10¾c.
Aug. 13	7¼@13¾c.	9 @11¾c.	10 c.

Beeves.—The effects of the blockade by the strikers on the different railroads, in the latter part of July, disturbed the market greatly. As might be expected, prices advanced, simply because for a time no cattle came forward, except all those which would have been unsalable under ordinary circumstances. Good cattle went at 14½c. ₱ lb., and many of the trash were about to be sold when, as suddenly as the roads were closed, they were opened again. Supplies then came forward so quickly, that the market was knocked the other way, and the gain and more was all lost. Foreign shipments, which were almost suspended, then began again, and after the lowest point was reached, a reaction took place, except for the poor stock; for them there was no chance to rise, and hardly any sale. Fat stock fit for shipment, were scarce, and if the market had been at all brisk, there would have been a strong advance. As it was, the best, averaging 58 lbs. to the gross cwt., reached 13¼c. ₱ lb.; prime steers brought 12@12¾c., and the poorest natives of 55 lbs., sold

for 8¼c. Common stock had a hard time at the close of our report. Texans sold for 7¼c. for 54 lbs., to 9¼c. ℔ lb. for good, averaging 55lb.

Cows have been in good demand, and light supply and naturally have advanced $5 @ $8 per head. Good family cows are eagerly taken at $60 to $65 each, and ordinary milkers went off slowly at $50 to $55....**Calves.**—The railroad blockade did not affect this class of stock, except to cause an over-supply from near by localities. A drop was the result, which required two weeks to recover. At the close an advance was made on prime veals, which sold for 7¾ @ 8c. ℔ lb., live weight. Grass calves raised on buttermilk, sold at 3½ @4c. ℔ lb., and the best brought only 4½c. Fair veals sold easily at 7 @ 7¼c ..

Sheep and Lambs.—The business in wooled stock has been very bad the past month. An effort was made to crowd sheep upon the market in place of beef, but this had the effect of running down prices 2c. ℔ lb., lambs suffering the most. A partial recovery was made at the close, prime sheep selling for 5½c. ℔ lb. live weight, while poor brought only 3½c.; thin lambs sold for 5@5½c. ℔ lb. alive, and extras at only 6¾c.....**Swine.**—The fear of a strike amongst the butchers, early in the month, prevented the scarcity from helping prices, and kept the market dull. After a slow and irregular business for the month, prices settled down to 5¾ @ 5¾c. ℔ lb. for live, and 6¾ @ 7¼c ℔ lb. for dressed, with a market quite devoid of animation.

Prices of Feed.

Bran, per ton	$18.00@$20.00
Middlings, per ton	19.00@ 21.00
Ground Feed, per ton	15.00@ 21.00
Linseed-oil-cake, western, per ton	41.00@ 47.00
Cotton-seed-cake, per ton	25.50@ 40.00
Chandler's Scraps, per lb	3@ 4

Prices of Fertilizers.

No 1. Peruv. Guano 10 p. ct. ammonia, standard, ℔ ton	$56.50
do. do Lobos, do. do, do	47.50
do. do guaranteed, ℔ ton, cargo C	56.00
do. do. rectified, per ton, 10 p. c.	66.50
Mapes' Complete Manure (Ville formula) p. 1,000 lbs	26.14
do. Wheat and Grass Manure, ℔ 1,000 lbs.,	27.00
do. Tobacco do. do.	24.67
do. Turnip do. do.	19.36
do. Bone, strictly pure fine ...per ton.	40.00
do do. do. medium do.	37.00
do. do. do. coarse do.	35.00
" Dissolved Bone, 15 per cent. do	40.00
Quinnipiac Fertilizer Co's. Phosphate, per ton.,	40.00
" " Dry g'd Fish Guano, ton 9 p. c. am'a	42.00
" " Pine Island Guano, per ton.	42.00
Stockbridge Corn Manure, (Boston) per acre	22.00
" Potato do do do	12.00
" Tobacco do do do	60.00
Bowker's Hill and Drill Fertilizer, per ton	45.00
German Potash Salts, (25@35 per cent), per ton.	20.00
Gypsum, Nova Scotia, ground, per ton	7.00@8.00
Nitrate of Potash (95 per cent.), per lb.	9½c.
Sulphate of Potash (actual potash 44 per cent) per lb	4 c.
do. do. (actual potash 27½ per cent) per lb	2 c.
German Potash Salts (actual potash 12 to 15 p. c. p. ton	$20.00
Muriate of Potash (actual potash 50 per cent), per lb	2½c.
Nitrate of Soda, per lb	4½c.@ 5 c.
Sulphate of Ammonia (25 per cent.), per lb	4¼c.@ 4½c.
Dried Blood or Dried Meat (ammonia 14 per cent) p. ton	$55

containing a great variety of Items, inc'uding many good Hints and Suggestions which we throw into smaller type and condensed form, for want of room elsewhere.

Publishers' Notices, Terms, etc.—The Annual Subscription Rates of the *American Agriculturist*, postage prepaid by the Publishers, are: One Copy, $1.60 a year; *Two* Copies $3; *Three* Copies, $4.20 ($1.40 each); *Four* Copies, $5.20 ($1.30 each); *Five* to *Nine* Copies, $1.25 each; *Ten* to *Nineteen* Copies, $1.20 each; *Twenty* Copies and upwards, $1.10 each; Single Numbers, 15 cents, post-paid.—The above terms are for the United States and Territories, and British America. To the above add 14 cents extra per year for papers delivered by mail in N. Y. City and for copies sent outside of the United States and British America, *except* to Africa, Brazil, British Honduras, the East Indies, and Mexico. For the last named five countries the extra charge is 38 cents per year, to cover extra postage; Single Numbers, 17 cents, post-paid.....**Remittances,** payable to Order of Orange Judd Company, may be sent in form of Checks or Drafts on N. Y. City Banks or Bankers or P. O Money Orders; or in Registered Letters, such letters to have the money enclosed in the presence of the Postmaster, and his receipt taken for it, and the postage and registering to be put on in stamps. Money remitted in any one of the above three methods is safe against loss. **Bound Volumes** from Vol. 16 to 35 inclusive, supplied at $2 each, or $2.50 if to be sent by mail. Sets of numbers sent to the office will be bound in our regular style for 75 cents (50 cents extra if to be returned by mail). Missing numbers for such volumes supplied at 12 cents each.—**Any Numbers** of the paper issued for 20 years past, sent post paid for 15 cents each.... **Clubs** of Subscribers can be increased at any time at the club rates, if new members begin at same date as original club.

Special to Far-off Readers—Making Things Equal.—Many of our readers live at great distances, on Continents and Islands stretching clear round the globe. Not a few are directly under us, as in Australia, New Zealand, etc.,—or we might say directly *over* us at midnight, if we call *up* towards the sun. Now these distant readers don't get their paper by telegraph, and it will be too late after its arrival to interest their friends and neighbors in the Special Offer on page 325. To meet all these cases, and treat all alike, the Publishers desire to say this: ☞ *The offer of extra numbers on page 325 will be open, everywhere, for* TEN DAYS *after this number comes to hand.* This will apply to any place in the world, where this September number does not arrive by Sept. 20. Six cents (or 3 English pence) should be added for extra postage on the extra numbers, to points where the regular prepaid postage is 24 cents a year.

That "Book Acre."—Last May it was suggested that an additional acre of land be set aside, to be cultivated at odd hours, to be called the "*Book Acre,*" and the entire proceeds be invested in good books on farming. Several acted upon the hint—probably very many of whom we have not heard. Questions now come "What Books do you advise?" The range is large, and individual wants differ. If those who desire such advice will briefly tell us their locality, general products they are raising, age of members of their families, and what books they may have on hand, and the amount to be invested, we will advise the best we can, either by personal letters, or by a general article, if there be enough of similar cases to warrant it. Some suggestions in this direction will be found on the third cover page of this paper.—**But** in addition to those who have such a special acre, there should be many others who will take advantage of the present good crops, to lay in a supply of valuable, helpful, profitable information in the form of good books. To such we will afford any practicable assistance we can in the way of selection.

The New Conn. Agricultural Experiment Station, is now organized ready for work. Circulars giving full particulars as to the kind of work to be done, analyses of fertilizers for farmers and others, etc., etc., can be obtained by addressing the Secretary, Prof. W. H. BREWER, New Haven, Conn.

Dip the Lambs and Sheep this Month.—It is now well established that the disease in sheep known as scab, is due to a minute insect, similar to that which causes the itch in man; in both cases we have only to destroy the insect, and the disease will disappear. With sheep, the most effective method is to dip the animals in some preparation that, while fatal to the insect parasites, will not injure the sheep or the persons engaged in dipping them. Arsenical preparations should only be used with a full knowledge of their character, and with proper precautions against danger. But there is really no need of using arsenic and such dangerous poisons, as there are effective dips that are free from these. "Buchan's Cresylic Sheep Dip," which contains carbolic, and similar acids, combined with soap, is not a secret compound, and is not injurious to the animals or the operators. It has now been in the market for several years, and has met with the approval of those who have made use of it. Careful flock-masters are not content with the usual spring dipping only, but as a matter of precaution, give a second dipping the present month, whether insects are seen or not, with a view to rid the animals of ticks, lice, etc., as well as the scab insect. Not only does this add greatly to the comfort of the animals, but it promotes the growth of wool sufficiently to cover the cost and trouble of the autumnal dipping.

Never the Same.—To the unobservant reader the front page of the cover may *appear* always the same. *But no two are ever alike.* Five new, original engravings, usually appropriate to the season, grace every successive number—one in each corner, and a larger one in the center—and these are generally highly artistic, and pleasing to the eye.

Plan of Grounds.—Will the correspondent at Bordentown, N. J., who sent this, give his name?

Temperance Songs.—In these days of activity in behalf of temperance, large meetings are held, and these are much enlivened by good singing. As a help to this end, White & Cole's "Temperance Songs," published by White, Smith & Co., Boston, are just the thing.

The Wheat Crop.—The present crop of wheat is estimated by the Statistician of the Agricultural Department, who has the best means of arriving at a correct conclusion, at over 320 millions of bushels, or about 8 bushels per head to the whole population of the United States. Our consumption is less than 5 bushels per head, which is the estimated supply needed for those countries where wheat bread is the staff of life. But here we use much rye, buckwheat, and corn, as breadstuffs, and these all go to decrease the consumption of wheat. There will certainly be a surplus of more than 100 millions of bushels of wheat to dispose of to foreign countries. Have we the market for all this vast quantity? Upon this question, considered with reference to the present price, depends the farmer's gains from this crop. Looking at all sides of this question, it does not appear that the farmer has anything to grumble about, although he may not get the top price for his wheat. A large Western farmer, known to us, has already marketed his crop of over 3,000 bushels, at $1.25 per bushel. Under present circumstances this should be quite satisfactory, and our friend congratulates himself *that he has made a sure thing of it.* It is worth something to feel in this way. As things in general now stand, farmers are the best off of any class, although prices are low. But it must be remembered that we are still on the descent to the bottom; and if in such a disagreeable passage, any class of people can find cause for congratulation—as indeed farmers can without searching long for it—then things may not, after all, be so bad as they seem, and hope may still give a silver lining to the dark cloud of business depression.

Among Other Things to do at the Fairs, take along a copy of this paper, and show it to some of the people; let them see its face, and tell them by subscribing now for 1878, they will *get all the rest of this year free.* Quite a club can thus be readily gathered, reducing the price to each. Crops are now good, and money is coming in for them, and it is a good time to make up clubs. The offer on page 325 will help a good deal—the extra numbers being a special premium *to* each new subscriber.

Abortion Among Cows.—"W. J. F.," New Castle Co., Del. Abortion is unfortunately a frequent occurrence amongst high bred and highly kept cows. The remedy is not easy to indicate. The causes are at present very obscure, and much difference of opinion exists in regard to them. The fullest information about this disease, and the proper treatment for its prevention, is given in an English work, now publishing in parts, entitled Veterinary Obstetrics. It is by the well-known English surgeon, George Fleming. When the work is complete, it can be procured through the Orange Judd Company. The price of the complete work is not yet announced, nor the number of parts to be issued.

Price of Lambs in New York.—"F.," Faulkland, Del. The price of lambs quoted in our market reports, of course is subject to all charges for freight, commission, and packages, if any are used. Very young lambs are boxed. It is a question if 10 cents per lb, in New York, would pay as well as 5 cents at home, where there are no heavy charges to come out of the proceeds. We have generally found the home market the best and most satisfactory. The names of respectable commission men will be found among the advertisements.

The National Agricultural Congress, meets at Chicago, at the Grand Pacific Hotel, on the 22d, and continues for three days. Agricultural Associations, Colleges, and Periodicals are asked to send representatives, and all persons interested in its objects are invited to be present. The Hon. W. C. Flagg, Moro, Ill., is President, and Horace J. Smith, Phila., Pa., Secretary.

Every Fruit Grower should recollect that the Am. Pomological Society will hold its biennial session this month, at Baltimore, Md., from the 12th to the 14th. All who can should go; if not members, they should, and easily can, join. There is every reason to believe that the health of Col. M. P. Wilder, the honored President, is such as to allow him to be present.

Wire Beds are one of the best of modern improvements. They cost much less than good hair mattresses, are more cleanly, are almost as elastic as a water-bed, and are durable. They do not need a mattress over them, but only covering enough to afford warmth to the body. This is said after having used them for three years. The last one tried, which proves admirable, is called the "Farnham Improved Woven Wire Bed," manufactured by Hiram Buckingham, of Chester, Conn., and is retailed at $12, (we believe the first ones made cost some $20 or $25.) We obtained it of W. C. Case, agent at Middletown, Conn. The impositions practised by traveling agents in some parts of the country, as noticed in our Humbug columns, has tended to cast distrust upon a valuable addition to household comforts. They are supplied by trustworthy dealers and agents.

As to Incubators.—"E. N.," Hollister, Cal. The two incubators described in the *American Agriculturist* for July, 1876, differ in the methods of heating. The Corbett machine is operated by means of fermenting horse manure. If any person is unacquainted with the behavior of such manure, he is apt to cook the eggs, or to let them cool, and in either case destroy them. The Day incubator is heated by a self regulating lamp, fed with kerosene oil, and as this may be made, by a lit-

tle attention, very certain in its operation, the Day process is to be preferred by those who either can not well procure the requisite manure for the Corbett machine, or do not know how it works when in active fermentation, or who do not wish to give constant supervision to the incubator day and night.

Milking Tubes.—"W. N. B.," Sangamon Co., Ill. In the *American Agriculturist* for Nov., 1876, was described and illustrated, a tube made for drawing the milk from hard milking cows, or those whose udders or teats are diseased. We give herewith a second illus-

tration of this milking tube, which shows correctly how the slide should be placed so as not to irritate the inner part of the teat. The tubes are made of silver, by George P. Pilling, 701 Chestnut St., Philadelphia.

750 Original Engravings for $1.60, or less.—At least 750 well executed, well printed engravings, of an instructive or pleasing character, will appear in the pages of this paper during the next 15 months. Many will be large; others, though small, will convey useful information about implements, convenient contrivances, valuable and ornamental plants, etc. Any new reader, subscribing for 1878 during this month, will get all these 750 Engravings, as well as a great amount of useful reading, for a single year's subscription price—at most $1.60, including postage, and less, where two or more club together, as noted on p. 326.

Coburn's Swine Husbandry, judging from the demand, is a book the farmers have been wanting. The work is a condensed presentation of our present knowledge on swine and all their belongings. The author is not so conceited as to suppose that what he does not know is not worth knowing, but has made use of valuable matter wherever it could be found, and he has given credit for it in a fair, open, and manly manner. We repeat that "Swine Husbandry" is the most valuable recent addition to our agricultural literature.

Sending Things.—Whether fruit, insects, plants, or other objects, are sent by mail or express, to be named or for whatever purpose, please mail, the *same day*, or before, a note concerning them. We have a lot of articles to which there is no clue, and are of no use.

Treatment of Splint in a Horse.—"L. H. P.," Salt Lake City. "Splint" is caused by a deposition of bony matter along the bones of the shank, almost invariably on the inner side. It is the effect of inflammation of the periosteum or covering membrane of the bone. The first symptom is lameness, and a peculiarity of this affection, is the low drooping of the animal's head when exercising. In the early stages there is heat in the part, tenderness, and a soft swelling. Then treatment may be effective. This consists of rest, the administering of purgatives, and application of cooling lotions. After the heat has subsided, blistering may be resorted to. When the bony matter is deposited, and can be felt or seen along the hollow of the shank, it is past cure. The disease is a counterpart of ringbone, only appearing in a different place.

Winter Oats for Feed.—"S. J. H.," Tuscumbia, Ala. The roughness of the upper end of the grain of winter oats, is not a serious objection to its use for horses. If there is any doubt about it the grain could be coarsely ground or bruised in a mill, then there could not be the least objection. The only possible trouble that could arise, would be when a horse should bolt the grain without chewing it, then the roughened beardy ends might irritate the intestines. Bruising or grinding would remove this danger.

Treatment for a Bruised Leg.—"R. N. C.," Morris Co., N. J. A swelling on the leg near the knee, caused by a kick, which does not readily disappear, may be treated with iodine ointment rubbed on to it three times a day. It is probable that an effusion of serum has occurred through inflammation of the membranes. This must be absorbed as soon as possible, lest it form a thickened fibrous deposit, which may become permanent. If it does not disappear after several days' treatment with the iodine ointment, the advice of a veterinary surgeon should be sought. It might be dangerous to trifle with it, as it is located near a joint.

Winter Oats.—"E. H.," Greenville, Tenn., writes in regard to winter oats: "This crop is now pretty generally grown in the mountain section of East Tennessee, and in some neighborhoods has been cultivated as a distinct winter crop for over thirty years. It has become quite as hardy as winter wheat or rye. The last winter was one of great severity; large peach trees and vineyards were destroyed by the cold, and many supposed our winter crops would be frozen out, yet they were not, and the winter oats stood the winter better, if anything, than the less hardy varieties of wheat. Those who ordered seed from the Agricultural Department, and from here, as a general thing, did so too late. This crop must be put in early, so as to give ample time to mature a good stout root and top before cold weather sets in; August and September are none too early to sow. The crop is very generally used for a late fall and winter pasture for calves and small stock. The yield of winter oats is fully double that of the crop sown in the spring, has no rust or smut, the stalk from its slow growth is stout, and it rarely falls down or lodges. The husk of the grain is thin, and the grain plump and large. Taken in all its qualities, it is one of our most valuable crops."—[It would doubtless be a wise thing to experiment in a small way with these oats. If they will be found to resist the cold of our Northern and Western winters, this will be a valuable addition to those fall crops we now have. The value of this variety of oats is fully established in the Southern States, where it may furnish much needed pasture or fodder. The hint about early sowing should not be neglected].

Fanning Mill for Cleaning Grain.—"A. S. S.," Petersburg, Va. The fanning mill you refer to, is probably that which is made by a manufacturer at Racine, Wis., and was referred to in the *American Agriculturist* of August, amongst the notices of catalogues received.

Disease in Pigs.—"I. M. P.," Buchan Co., Iowa. Diarrhœa and vomiting are symptoms of bilious disorder, such as the so-called "hog cholera." This is much more easily prevented than cured. The proper mode of treatment depends very much upon the previous management, or mismanagement of the animals. A mixture of sulphur, or copperas and charcoal, in equal parts, has been recommended, and found both preventive and curative. A tablespoonful of the mixture is given at a dose.

Impaction of the Stomach, "Dry Murrain."—"G. F. C.," St. Joseph, Mich. This disease is fatal if neglected, as it soon disturbs the nutritive functions, and the blood becomes disorganized. Indigestion is the cause of it. On the first symptom, which is a sleepy, dull, listless condition, with torpidity of the bowels, and constipation, pint doses of linseed, sweet-oil, or lard, should be given. Injections of soapy water are useful. Bleeding is to be avoided as dangerous. When the symptoms are aggravated, and the animal refuses to move, the case is serious. Then copious drenches of water sweetened with molasses, and strong purgatives of Epsom salts dissolved in plenty of warm water, should be given. Alternately with the sweetened water, an ounce of carbonate of ammonia dissolved in a gallon of water, may be given twice a day, if the animal needs a stimulant. The copious watering is needed to dilute the dry contents of the stomach.

Making Phosphate.—"W. W. M." If we were to give advice to those about to make phosphate, we should say "don't." The operation is very risky and disagreeable. Having tried it once, we would pay double price for the ready made phosphate rather than make our own. Good, pure superphosphate can be bought so low, of any of the respectable dealers whose names are found in the *American Agriculturist*, that it is not even economical, even were it safe and easy, for one to make it himself from the materials.

Treatment for Hog Cholera.—"D. W. D.," Madrid Bend, Ky. To give the different courses of treatment for the prevention and cure of the disease known as "hog cholera," would occupy more space than we could spare, when there are other means of procuring the information wanted. This can be had in full in the new work on Swine Husbandry, by F. D. Coburn, of Pomona, Kansas, published recently by the Orange Judd Co., price $1.75, free by mail. No swine breeder or feeder should be without this book, which contains all the information of value about swine, their feeding and general management when well or sick, that can be gathered from the most trustworthy modern sources.

Culture of Corn in Drills.—"S. G. W.," Gentry Co., Mo. There need be no difficulty in growing corn in drills instead of check rows, if the proper implements are used in the most effective manner. The seed may be dropped with the ordinary two-row planter, the usual distance apart for the row, but not so far apart as usual in the row. Thus rows 3½ or 4 feet apart, and the seed placed 2 feet apart in the row, would be a very good method. The plants may be thinned out to two stalks to a hill. When the corn is up, or before this, the ground should be harrowed with a Thomas harrow, which does not injure the plants. The system of cultivation in drill planting, is to destroy the weeds in the germ, and let none escape to grow strong. As soon as the rows are well up, they are worked with some implement which cuts close to the corn. The Perry Scarifier, or the Shares' Horse-Hoe, we have found very effective for this. The ground is worked frequently, not waiting until it is weedy, to begin to cultivate. It is necessary to cultivate early and often. We find this method less troublesome and more profitable than the check row plan.

Sundry Humbugs.

The object in exposing frauds of various kinds, and the rules by which we are governed, have been stated so frequently and so explicitly, that we might suppose they would be generally understood. Notwithstanding all this, a letter every now and then shows that our objects and methods are misapprehended. Here is one from New Jersey, which says: "Will you please write and let me know what your rates are for advertising humbugs and swindlers in your paper. *** If your rates are not too high, I would like you to advertise a firm for me, who have swindled me out of $16 or $17," and the writer then goes on to give a history of his case. We have stated, and must now repeat, that the exposures in these columns are made solely to warn our readers against fraudulent designs, and that they can not be used for any other purpose. If one has been swindled, he naturally feels a desire to somehow "get even" with the swindler, and if he can not recover his money, he can at least have the satisfaction of exposing the rascal in print. The writer of the letter quoted above says, that he threatened the swindler with

EXPOSURE IN THE AGRICULTURIST,

and we occasionally hear of similar threats made by others. While we have no hesitation in exposing any fraud—no matter what the position of the author of it, we try to bring common sense to the management of the matter. Being perfectly disinterested, we often see a transaction in a different light from the party concerned, and it is not rarely the case that the complainant is as much to blame as the party complained of. As in making the publication, the responsibility falls upon us, we must be the sole judge of the nature of the evidence presented, and of the propriety of making the exposure. Take the case already referred to: we are requested to publish so and so as swindlers; the transaction is stated, but not a single letter or other document is given in support of the statement, but we have only the word of a party personally unknown to us. We do not doubt the writer's good faith and honesty in the least—simply the evidence is not sufficient. We would say to our New Jersey friend and to others who ask the question, that no money can purchase an insertion in these columns, and we must be convinced that the public will be benefited by a publication, and that the evidence is sufficient to warrant it, before we can publish any one as a humbug.

SWINDLES UPON FARMERS

are rather more numerous this season than usual, and they seem to be much after the style of the "Spring Bed Swindle" described last month. Instead of spring-beds, some chaps in Illinois have played the same game with a new kind of wire fencing. The plan is to offer to give the farmer 50 rods of the new fence, if he will put it up along the road where it will be seen, and serve as an advertisement, and the farmer is to have the sole agency for the town, and be paid a handsome commission upon all orders he may take. The farmer accepts the proposal, and the agent tells him that it will take two coils of wire, for which the farmer willingly signs an order. In a few days a stranger comes along to collect a bill for wire fencing, and wishes immediate payment. The farmer explains that he put up the fence as an advertisement and was to have it free. He is told that he was to have 50 rods free, but he has ordered outright 150 rods, and must pay for this at four cents a foot. If the farmer is timid, he settles with the chap somehow, perhaps gives his note for $100, to pay for the wire he did not order. When he comes to examine his wire, he finds that he has 200 rods of wire, which will only make 50 rods of fence, four strands high, and in due time learns that his note has been discounted at the bank in the nearest town.

THE LIGHTNING ROD SWINDLE,

though so old, and so often exposed, is far from killed; the latest accounts come from Ohio, where the same old

game is played. The Lightning Rod man proposes to appoint the farmer an agent, and he offers to put rods upon said farmer's house, to be paid for out of the first job that the farmer-agent may bring "the company," and holds out such inducements that the farmer agrees. To make it all straight, L. R. man gives the farmer a signed agreement to put up the rods, within 60 days—there is nothing like doing business in a business-like way—and the farmer is requested to sign a receipt for this agreement. It is the old story—another chap comes along to collect a bill for $180—the cost of the rod on the farmer's building, and if he demurs, there is his name signed to the order,—old, but too often effective....The success of frauds of this kind depends upon the representations of the profit that may be made. If a farmer is attending to his own business properly, he has no time to engage in outside speculations, especially those about which he knows nothing whatever. It will be noticed that almost every swindle of this class—the spring-bed, the wire fence, the lightning rod, etc., is clinched by

THE FARMER'S SIGNATURE,

and though we have frequently urged upon every one to "be careful what you sign," the injunction is still needed. Indeed, it will be a great deal better not to sign at all. Those only, who do not listen to, or tolerate any of these chaps, who infest the country east and west, north and south, are safe....Another, and a

BRAND NEW SWINDLE,

comes from Illinois, and this appeals more directly to his wife and daughters than to the farmer himself. A peddler comes along with laces and other fine goods, which he offers at such low rates that the good woman can not resist the temptation to buy, and the peddler goes off, leaving them happy over their great bargains. In a day or two, two men drive up, and show a printed hand-bill, giving an account of the robbery of a store. The supposed robber is known to have stopped at the house, one of the men claiming to be the store-keeper, recognizes the goods bought of the peddler as a part of those he has lost, and especially if there is no man at hand to prevent, they seize and carry them off....A correspondent in Iowa is very indignant at having received a circular from some phrenologists, which proposes if he, the recipient, will send a profile view of his head and five dollars, they will send a description of the character of the individual, giving directions as to "the future development

NECESSARY TO SUCCESS IN LIFE,"

and asks us if this is not "a mean humbug that ought to be ventilated." To answer this correspondent would open the whole question of the truth of phrenology, which we do not propose to discuss. If denouncing it as a humbug or delusion would kill it; phrenology would have been very dead, years ago, yet it seems to survive in spots, and many well-meaning persons actually believe in it. While we have our own opinion on the so-called "science," we can not see that the case is one that comes under the head of fraud. The phrenologist offers to furnish, under certain conditions, his guess at a man upon examining his portrait. There may be a difference of views as to the value of such an opinion; if any one wants it, the price is named, but no one is obliged to buy at that or any other price *We* would not buy....New York had at one time a matrimonial paper, but as we have seen nothing of it for a long time, we infer that it has gone the way of all such things; but Philadelphia is not without a

MATRIMONIAL ADVERTISER,

a little sheet called "Fortuna," of which the 1st and 2d numbers have been sent us. Its heading states, "Containing Information for all who are desirous of Marrying." We infer that business must be dull, as there are only 9 "Cards from Ladies," while there are 11 "Cards from Gentlemen." Very funny reading they are. A young lady of genteel appearance and $150,000, ought not to wait long for a taker. A widow with six children, weighing 156 pounds, has a lager-beer business, which brings in $2,000 yearly, and wants a man to look after the business. One can not help wondering if these are *bona fide* offers—yet as there are matrimonial agencies in large cities, which have been in operation for many years, we suppose there must be cases in which husbands and wives are traded for like horses, cattle, and provisions. ....The circulars of what purports to be the "Finance Committee of

THE LOUISVILLE LOTTERY ASSOCIATION"

continue to come from all quarters. It is alleged that in settling up the affairs of the "Company," there were $94,000 in undivided prizes. Some how this was invested in watches and things, and a second drawing made on behalf of the ticket holders in said lottery. Circulars are sent out informing individuals that their "joint interest in the Louisville Lottery Association has resulted in your drawing a "——there is after this a blank to be filled in with ink, and in the numerous circulars that have been sent us, this is filled with "Gold watch and chain valued at $150." Then the individual is informed that "the 10 per cent assessed on all prizes, makes the amount due on your prize $15," and that by sending this amount to Russell & Co., N. Y., they will forward the prize. We have had numerous letters regarding the matter, some asking us to get the watch, sell it at near its valuation, and forward the balance, taking pay for our trouble, and do various other things that are quite out of our line. Others ask our advice, or our opinion in the matter. We have in former numbers, and often, expressed our opinion as to lotteries of all kinds. Holding, as we do, that they are wrong in principle, and do a vast amount of harm, we can not consistently aid and abet in procuring prizes, or in acting as agents for those who choose to have dealings with them. Looking at the matter on general principles, we judge that those who send out these circulars do it to make money. They do not anywhere state what is the cost of, or the real value of, the watch, but state that it is "valued" at $150—a very easy thing to do. They propose to send a watch on payment of $15. If any one supposes that the "Louisville Lottery Co.," or any one else, will send them any more than fifteen dollars worth for $15—he has a confidence in human nature that is likely to be disappointed. Our advice is to let lotteries in all their manifestations and developments severely alone, and our opinion is that *this* one is an ingenious scheme to make money. We are very sorry to say that some of the letters relating to this matter have given a glimpse of the

WORST SIDE OF HUMAN NATURE.

These circulars profess to be addressed to those who held tickets in, or had an interest in, the Louisville Lottery. Some have admitted that they had no such ticket, but if a watch worth $150 could be had by paying $15--they were willing to have us get it for them. The moment one who has had no interest in such a lottery reads that his "joint interest has resulted" so and so—he knows that it does not concern him, and whatever may be the character of the scheme and its promoters—he has no moral right to avail himself of whatever alleged advantages may follow....A correspondent in Illinois complains of an

ADVERTISED REMEDY FOR CORPULENCE,

advocating the use of some sea-weed, the taking of which will cause leanness. Our friend invested, but regards himself "a victim," for, as he says, if one will follow the system of diet and exercise recommended, he will get lean without the use of the sea-weed. Our friend has discovered the secret of many of the medicines that are taken, and of various external applications. Several years ago there was a popular hair remedy; in its use the head was to be brushed for 15 minutes before applying, and for the same time afterwards. It was really the friction that was useful. So with various remedies that can only have effect if the patient abstains from stimulants of all kinds, pepper and all other condiments, bread of fine flour, and many other things. The medicine, to be taken in carefully measured quantities, at closely observed hours, amuses the mind and gets the credit, while the *diet* does the work.....Several months ago we noticed a circular from a man in Cincinnati who practises what he calls

VITAPATHY,

and as we could not show up the absurdity of the thing so effectually in any other way, we quoted from his pamphlet, with some running comments. Vitapathic man did not like it, and wrote us to the effect that we should investigate it, as it, Vitapathy, was to be a great benefit to the human race. He now sends several copies of a new edition of his pamphlet. Prof. Carpenter, of London, the renowned physiologist, in one of his works, speaks of people who are unconsciously self-deluded, and illustrates by the case, among others, of a "water-witcher," who really thought he had the power to discover water by the use of the divining rod. This vitapathic man may believe what he prints—but what a capacity for credulity he must have! The first page of this precious document (which on the cover he begs us to "Read it to our Family"—not to excess,) tells us that

"THE VITAPATHIC SYSTEM

commences with the beginning of things—ascertains what is life, its nature, its power, its source and extent, what it is, what it does, and how it does it, and how we are to use it to accomplish all things and make it a panacea for all diseases, and for death itself." There is page after page of stuff in a similar strain, including a "Vitapathic Marriage Ceremony," and a "New Vitapathic Remedy" for Hog Cholera! If the man believes the stuff he has printed, his friends should kindly care for him; if he does'nt believe it—then he is about the most arrant humbug amongst all the many that we have had the misfortune to know of.

Portable Poultry House. Egg Carrier.—Some time ago we received a letter in reference to a portable poultry-house, and a very promising egg carrier, from A. R. Sprout, Picture Rocks, but where the Picture Rocks are situated there was no clue. Consequently we could not write, as we wished, to ask for drawings of the poultry-house. We should be glad to have them. Will Mr. S. write with full address in reference to the egg carrier.

An Honor for Col. Waring.—Col. Geo. E. Waring, Jr., Newport, R. I., has been elected a member of the Royal Institution of Engineers of the Netherlands. As there are only six other members besides the Royal and other officials, this is regarded as a distinguished honor. The services of Col. W. in relation to the exhibition of the plans of the public works of the Netherlands, at our Centennial Exhibition, and his writings upon Holland and its great engineering works, are assigned as the reasons for bestowing the honor.

Some Remarkable Individual sends a notice of a "National Convention" of Bee keepers, to be held in New York in Oct. The date is not given, but that is no matter, and no name is signed, and that shows that there is just one person now alive who supposes that we are stupid enough to notice a meeting of which he is so ashamed that he will not connect his name (providing he has one) with it.

Artificial Switch for a Cow.—Mrs. "D.," Cumberland, Md. It is very difficult to fasten an artificial switch on to a stump tail cow, as it will either slip off when moved violently, if not fastened tightly, and if tightly strapped on, it will hurt the stump. We never knew any substitute for the natural tail to be of any use. We suggest covering the cow with a net or cotton cloth, such as is used for horses, or to sponge her with carbolic soap suds, leaving it to dry upon the skin.

To Preserve Horse Manure from "Fire-Fang."—"T. J. C.," Painesville, Ohio. Horse manure may be kept perfectly well until thoroughly decomposed, by piling it in thin layers with earth intermixed alternately. The heap should be wide and flat, and made hollow to catch the rain. The fermentation is slow, and all the gasses are absorbed by the earth.

Books on Cattle, Sheep, and Pigs.—"H. F. N.," Mandarin, Fla. The best available books on the subjects mentioned, are Dadd's American Cattle Doctor, price, $2.50. Stewart's Shepherd's Manual, $1.50. Coburn's Swine Husbandry, $1.75. Stonhenge on the Horse, $2.50. An Egg Farm, by Stoddard, 75 cents. The nearest breeder of Short-horns to Florida, known to us, is Richard Peters, Atlanta, Georgia.

What Crop on a Poor Stiff Soil.—"T. B. P.," Goldsboro, N. C. It is useless to expect a profitable crop of wheat, corn, or oats, without manure, on a soil run down by the constant planting of cotton. Perhaps as good a plan as any, in this case, would be to plow the soil thoroughly, harrow well, and sow down to winter oats, with 200 pounds superphosphate of lime per acre. To pasture the oats in the spring, would probably be the best plan, and afterwards plow in time to plant corn, using a handful of either the Mapes or Bowker's corn fertilizer, scattered around each hill just before the first hoeing. The field might be sown with peas when the corn is laid by, and these plowed in for a crop of rye, with which the field might be seeded to clover in the spring. After the second year corn might be taken again, then winter oats seeded with clover, and so on. By and by, doubtless, the land can be profitably sown with wheat.

The Echo Farm Herd.—From a necessarily hurried visit to the Jersey herd at Echo farm, which was described in the *American Agriculturist* of August, we were led into an erroneous supposition that "Pride of the Village," one of the cows mentioned, was sired by Litchfield, and was one of the herd exhibited at the Centennial. We are informed by the owner of the herd, F. Ratchford Starr, that our statement to the above effect was not correct. We therefore make the needed correction. We do not consider, however, that this detracts from the merits of "Pride of the Village," which we judge to be one of the choicest animals of the herd.

Draining.—The present season has made it evident to hundreds of farmers, that money or labor spent in draining upon low grounds, is a profitable investment. We have seen many pieces of corn, either parts of fields or whole fields, that are now much injured by too much moisture, and the loss in many cases is equal to what would be the whole cost of the needed drainage. Now that fields are being prepared for wheat, there are some that are either too soft in low spots, or are hard and lumpy, being more like baked mud than arable soil. Had these been drained, this defect would not have hindered work, nor have prevented the wheat from being sown in the best manner. The crops of the past season will bring

more money than usual into farmers' hands; it would be a good thing to put some of it into such permanent improvements as draining, by which the value and productive power of the land may in many cases be doubled.

A Useful Grange Meeting.—Our remark, made at the outset of the institution of Granges, to the effect that in time they would most probably develop into useful "Farmer's Clubs," as these meetings are generally understood, is exemplified by the proceedings at a meeting of the Palmyra (N. Y.) Grange, held on July 21st. Samples of wheat were exhibited, the best of which were of the Post and Clawson varieties. Specimens of currant jelly were shown, made by squeezing the juice from ripe currants, and adding to it an equal quantity of white sugar. The mixture was then brought to a boil, and boiled only 5 minutes. Others were made without boiling, by exposing the sugared juice for one day to the heat of the sun on a tin roof. Samples of fruit, including a new seedling cherry; conversations about qualities of different wheats, in which the red wheats were chiefly recommended, and regarding a Fire Relief Association, also helped to fill up the time of the meeting. Here was a practical and useful way of occupying time which, however, scarcely needed the costly formalities of a Grange establishment; but if this was a necessary condition for such a meeting, there is then a good excuse for it.

Poisoning by Paris Green—Antidote.—"W. F. H." asks, "What to do in case of accidental poisoning by Paris Green."—Paris Green is so deadly a poison that the utmost care should be taken to prevent accident, and every one should know what to do in case poison has been taken into the stomach. There is but one tolerably certain antidote, the freshly prepared *Hydrated Peroxide of Iron*, or *Ferric Hydrate*. This cannot be kept on hand long, as it soon changes and becomes inert. All well managed drug stores keep on hand the means of preparing it at once. In case of poisoning by Paris Green or any other form of arsenic, give an emetic. Mustard is always at hand; give two tablespoonfuls of *Ground Mustard* stirred in a quart of luke-warm *Water*.—Drink freely, tickling the throat with the finger to induce vomiting. When the stomach is emptied, give *Calcined Magnesia* in tablespoonful doses, stirred in milk, repeating every 15 minutes. When the vomiting ceases, give a large dose of Castor Oil. But send first to the nearest physician, and also to the nearest apothecary for *Hydrated Peroxide of Iron;* the doctor will want it; if he is not present, give it in tablespoonful doses every 10 or 15 minutes until the patient is relieved. It is in the form of pulp like Indian-red paint. No harm can come from giving too much. When the doctor comes, follow his directions.

The Great Value of Ashes, Leached and Unleached, and the reasons therefor, are pretty fully discussed by Prof. Atwater, on page 330. It will be worth while for all to read the article. Those using hard coal, use more or less kindling wood, producing good ashes; and the hard coal itself having been originally from plants, supplies a little potash, etc., though the greater heat melts and vitrifies the alkalies so much as to render them not immediately available to plants. We have seen good results even from hard coal ashes, though as a rule they make such excellent covering for foot-paths and roads, that they are most useful for this purpose. They are well worth preserving for one or the other of these uses. We have materially improved the *texture* of a heavy soil by a free application of them.

Machines for Cleaning Grain.—"J. H. P.," Armstrong Co., Pa. Various kinds of fans or windmills, for cleaning grain and seeds of all sorts, are made by many of the manufacturers whose notices are in our advertising columns. These parties will be happy to send catalogues of their goods to any one who asks for them. See also notices of various catalogues mentioned nearly every month. If these notices and advertisements were examined regularly by those in need of anything whatever, the desired information would be almost certainly found. There is no more comprehensive list of useful articles to be found anywhere in print, that we know of, than the advertising columns of the *American Agriculturist* throughout the year. They are worth reading, if only for the varied information they give.

Pasturing the Highways.—One of the greatest nuisances of rural localities is the pasturing of stock upon the roads. The road is the private property of the owner of the land on each side of it; he gives only the right to use the land for travel to the public. In law, when this use is no longer exercised, the land reverts to the owner. The grass, fruit, trees, etc., growing on the road-side, are the property of the owner of the soil, and not of the public, and he may plant his garden there, if he does not interfere with the conveniance of the public in passing to and fro upon the road. No man then should use the roads for pasturage. No one has a right to do this; and when cows are permitted to graze upon the road-sides, they may do much damage, by entering gates that may be left open, and destroying garden and field crops. Localities, in which the roads are made common pasturage, are to be avoided by all persons seeking new homes, for whatever the attractions of a place, this nuisance would neutralize them all, and leave a large balance on the wrong side.

"Snow-hill Durhams."—"W. V. C.," Troy, Ind. There is no breed of cattle of the above name. The Durhams are the Short-horns, as they are now universally known. Various breeders, who have carefully kept up a strain, frequently name their herds in the manner referred to, and there may very probably be a herd so called, which we do not remember.

Go the Fairs—Why?—"Fair" is not just the word for our autumn shows—"Exhibition" would be better—but the word has come by use to mean exhibition, when it don't mean a "horse-race" exclusively. We say, go to the fairs. Just as reading other's thoughts enlarges and stimulates one's own thinking, so contact with other men, seeing what they do, what they show, asking how they produced this or that good thing, can not fail to afford some new hints and do one good. A day at the fair lifts one out of daily drudgery; the sight of so many people engaged in the same calling, helps one out of that low view which the great mass of farmers set upon their own pursuit. However much farmers may talk of the dignity of their calling, there is in their hearts too low an estimate of it. If a son goes into a store, or a daughter marries a merchant, or professional man, they will speak of it as something to be proud of. This is wrong. Agriculture, from Adam down, has been and is the noblest pursuit. Going to the fair will help in this and many other ways. Go early in the day, and have a quiet look at things, before the horse-races disturb the general and good order of the day.

Clothing.—A Great Convenience, as well as economy, for a multitude of people living remote from business centers, is afforded in the present improved plans of sending out cloth samples with prices affixed, adopted by some large dealers, so that any one can examine the fabrics *at home*, know the cost of any garment, and have it forwarded directly to them. The carriage by the mails of parcels of not over 4 lbs. at the cost of a cent an ounce, or 16 cents a pound, brings a store to one's own door. (We remember sending a silk wedding dress by mail, a few years ago, to one of our subscribers in the interior of Kentucky, which cost 96 cents a pound for postage, and even then it gave great satisfaction). Those wanting men's garments are referred to the advertisement of Foote & Richardson, page 349. Letters from our readers who ordered of them during the summer, express great satisfaction with the result.

Basket Items continued on page 353.

A Hundred Per Cent Interest!

"G. W. M.," writes from Iowa: "... Some talk about their good luck in receiving 20 per cent, or more, for a little money invested. I can tell how I got not only 100 per cent for an investment, but many times that, and I believe hundreds of thousands of others can do the same. During five years past, I have bought, at a total cost of $34.25, eighteen books on farming and gardening, stock-raising, and fruit-growing, including one volume on farm buildings, one on drainings, and one on housekeeping, (Youman s Household Science). I have read these, about one in three months; my sons have read them; my neighbors have borrowed and read them, and there they stand in a neat row on a shelf, always ready not only for reference, but the finest ornament we have in our humble dwelling. We feel proud of them; they give an air of intelligence; we feel our dignity as a reading family; my sons talk intelligently, and they insensibly appreciate a calling that has even 18 books treating of it. They don't talk about leaving the farm for a 'higher calling.' When at work they talk about what such and such an author says. I know they are happier for it. In these respects I know the books have paid *a thousand* per cent. That $34.25 would buy one small animal, or a cheap set of furniture, but none of my family would vacate that book shelf for a dozen of animals. I will not pretend to say how much good these books have done among our neighbors, in elevating their tastes and their dignity, as well as in giving useful information—how much scandal has been avoided, because the readers of the books have something to think and talk about, gathered from these books; how many demoralizing 'novels' have not been read because these books took their places. There are fewer candidates among *our* farmers' sons for city life, where, as we know, 95 out of every hundred fail to succeed.

But there is another paying side to our library. During these five years we have saved at least ten animals, from a chicken, pig, sheep and cow, up to a valuable horse, by the use of the knowledge we got at once from our little library. I can see well, where by hints, suggestions, new thoughts, avoidance of errors, etc., which have come to me through reading the seven thousand pages in these 18 books, of other men's experiences and operations, I have myself planned my work, my sales, my implements, etc., more profitably. No, I would not be without their benefit to myself and family for a hundred times their cost. I wish I had got twice as many such books, twenty years ago. I send you a list of what I have, and want your advice what to get more, to the value of $40 this fall. I did not cultivate that extra 'Book Acre,' we had not an extra acre left, but my second son has some pigs that will bring about $40, and he says 'we will put the money in new books, on another shelf, to be mine, and when I go on a farm I will take them for my house, and we can all read them until then.'—I have written this to re-inforce what you have often advised. If my brother farmers could see the advantage of such books, as I see it, and *know* it, there would not be a farmer's cabin or mansion in all the land, without at least a small farm-book library right off....."

Being Familiar with Our Readers.

The rule of this office has always been to consider the Readers, the Editors, and the Publishers also, as holding a sort of *family relationship*, with *mutual* interests to be guarded and promoted. What helps, aids, removes difficulties, or otherwise benefits our readers, young and old, should give, and we believe *does* give, the highest satisfaction to the Editors. If an objectionable or doubtful advertisement is offered, with ever so much money tendered to get it inserted in these columns, (for such advertisers offer big prices,) the Publishers should not, and we believe do not, look one moment at the profit, but how will it affect the readers. If they had no kindly feelings, no thought but how to make the most money, yet, if wise men, they must see, that, in the long run, honesty is the best policy; that if they fill up the business pages with things that will be unprofitable to the readers of ordinary judgment, they will by so much diminish the value of such pages to good patrons, and in the end lose by it. (We heartily wish all publishers, even of some of the "religious papers" could, and would, take this view of it. How many tons of worse than useless—of death and disease introducing medicines—would fail to find a market.)

On the other hand, we believe our readers generally appreciate this family relationship, and that they take an interest in the Editors' and Publishers' plans. So we do not hesitate to talk familiarly in the reading pages, of the plans, the offers, the business arrangements, etc. Sometimes a reader will object to these business talks—that there is too much of them, etc.—but we believe the great multitude of our readers are rather pleased than otherwise, with plain talk—with our telling our plans and purposes familiarly. We like to have them do so with us. If any of them have big crops, fine farms, prosperous circumstances, we like to hear of it, and rejoice with them, even if we do not find room to put it down in print.

Bee Notes for September.

BY L. C. ROOT, MOHAWK, N. Y.

During the present month, if the weather is favorable, we may reasonably expect a fair yield of fall honey. Golden Rod will be in bloom very freely in most parts of the country. Partly filled boxes, that are not too much rounded and finished, may be completed. Those that are rounded over and sealed on the edges, should be removed. There is a large proportion of such boxes at this date (Aug. 6th), owing to the sudden cessation in the yield of white honey. It is seldom advisable to place empty boxes upon hives so late in the season, expecting them to be filled. It would be better to take the honey from part of the combs with the Extractor, and let the bees refill them.

Questions and Answers.

BEE FORAGE.—"What trees would you advise planting as affording best forage for bees?"—I think the native Basswood is best, as it matures rapidly and yields very abundantly. It is sometimes called Linden, and is found in abundance in many States. It blooms in Central N. Y. about July 15th, and the honey is of the finest quality.

"STOCK AND SWARM."—"What is the difference between a stock and a swarm of bees?"—We usually speak of a swarm of bees as it issues from the hive, or as taken separately from the hive, while a stock is spoken of as including hive, combs, and bees.

RETURNING FIRST SWARM.—"Do you think it advisa-

ble to return a first swarm when an increase in swarms is not desired?"—This is a good, practical question, and the entire space given to the "Notes" might be profitably used in answering it. In my home apiary about one-half of my hives are boxed, and the rest are extracted. Those extracted seldom swarm, no matter how populous. When a swarm issues from a stock that is boxed, I remove part of the combs filled with brood, and after removing all the queen cells from the remainder, fill the place of those taken away with empty frames, and return the swarm. In most seasons this will prevent further swarms, if plenty of box room be given. The combs of brood removed may be given to lighter swarms for extracting.

TO MAKE BEES WORK IN BOXES.—"How can I induce my bees to work in boxes?"—Fasten pieces of white comb in each box, and if strong with bees and plenty of forage, there will usually be no trouble.

SWARMS GOING BACK.—"One hive of bees has attempted to swarm four different times, and each time returned to the old hive. What was the cause?"—Without doubt the old queen had a poor wing, and being unable to fly, returned to her hive, when the bees returned with her.

NON-SWARMING BEES.—"My bees collect surplus honey, but do not swarm. Why is this?"—Bees often gather so much honey early in the season, and the combs are so filled with it, that space is not left for a sufficient amount of brood to be reared, and, in consequence, colonies do not become populous enough to swarm. In such cases, the Extractor for emptying the combs is invaluable. In other seasons stocks may be very populous, and a lack of honey will hinder swarming.

STRAIGHT COMBS.—"How can I manage to secure straight combs in my frames?"—If a frame or two filled with combs were placed in each hive, they would assist in securing straight combs. Recent experiments impress me that the comb foundation, which is being largely manufactured, may prove serviceable in this direction.

THE BEST HIVE.—"All things considered, which is the most desirable hive?"—I use the "New Quinby." Would change, if I knew of a better one.

ALSIKE CLOVER.—"Will this alone produce a good crop for stock?"—Not the best. If I were to carry on farming in connection with bees, I should sow it each year, as it yields honey abundantly and of a fine quality. It does not stand severe winters well.

TIME FOR PUTTING ON BOXES.—"Does it make any difference in the amount of surplus honey, if the boxes are put on before the bees have filled the hive below?"—Yes, if a card of brood be placed in the hive when the bees are put in to keep the queen from entering the boxes, and the yield of honey be good, I would put boxes on at once. If the brood is not furnished, I would put boxes on in a couple of days.

"DO BEES NEED SALT?"—It is not essential to them.

Science Applied to Farming.—XXXIII.

Wood Ashes, their Composition and Uses as Fertilizers—Ashes vs. Phosphates and Guano.

I had quite a talk with a farmer friend in Vermont, recently, about ashes and phosphates as fertilizers. He had been using both, the superphosphate, of good quality, costing about $50 per ton, while fresh ashes could be had at 12 to 15 cts., and leached ashes at 10 to 12 cents per bushel. He was in doubt as to whether the phosphate paid, but was quite certain the ashes were profitable. I thought the ashes cheap and the phosphate dear, and advised him to use the ashes, and very freely. I believe practical experience and correct theory justify this advice.

Very common experience shows that wood ashes are an excellent, reliable, and lasting fertilizer. Hundreds of farmers will recall places where a brush heap or an old log has been burned, and a luxuriant vegetation has followed and lasted for years. In this section it is an old saying that "the land never forgets ashes." Many of our best farmers in Connecticut use leached ashes, imported from Canada, at a cost of from 18 to 28 cents or more per bushel, in preference to all other fertilizers except barn-yard and stable manure. Mr. T. B. Wakeman, of Westport, one of the most successful farmers in the State, says:

"The farmers here have used ashes for more than thirty years; the cheapest manure we can buy. Over 30,000 bushels were sold here last year, besides 400 tons of bone, which is next to ashes as a fertilizer. We know that ashes and bone-dust pay, and more than three times over. We can put that down as a fact, and prove it, too. If any one doubts it, will call and see our crops, when growing, he will admit its truth."

This good effect of ashes is very easy to explain. The trees from which they come subsist in essentially the same way as the cultivated crops. Both require the same materials for food, though in somewhat different proportions, and obtain them from the same sources—atmosphere and soil. The ash that is left after the wood is burned, includes, practically, everything that the tree took, and the plant requires, from the soil, except nitrogen, and the ingredients are in very available forms. Further, while the ashes do not supply nitrogen themselves, they are very active agents in rendering the nitrogen of the soil available to crops. Our ordinary soils contain this precious ingredient largely in excess of the needs of the crops. But the larger portion of it is in such forms that plants can not appropriate it for food. This is the case in partially decayed vegetable matter, as roots, stubble, humus, etc. Ashes induce chemical changes by which the nitrogen is rendered available. They do the same for the other soil ingredients of plant-food also. In the fragments of minerals and rocks contained in every ordinary soil are locked up stores of potash, lime, magnesia, phosphoric acid, and so on. The ashes liberate these, and work them over into forms fit for the support of plants. These changes of plant-food from inert to active forms, are going on in the soil all the while. It is in virtue of these processes that our soils are enriched by tillage and fallowing. Ashes, by accelerating these changes, enable the soil to feed the crops it bears more rapidly, or what is the same thing, more bountifully than it otherwise could.

Again, ashes may be useful as a mechanical amendment to the soil. On a portion of one of the fields belonging to my friend alluded to, ashes had been applied. On comparing this with an adjoining strip where no ashes had been used, a great difference in the texture of the soil, a somewhat sandy loam, was noticeable. Where the ashes were, the soil was soft and yielding to the step. We could run our fingers down into it several inches, and dig up large handfuls with ease. Where no ashes had been applied, it was harder and more compact, and it was with difficulty that we could force our fingers into it more than an inch or two. An acquaintance was telling me, recently, of some of the farming land in New Jersey that has been so wonderfully improved by the application of marl. He said he could tell the soil where the marl had been put, by the tread, when walking over it, even in the darkest night. The marl he referred to was somewhat similar in composition to leached ashes, and its application produced analogous effects.

And, finally, ashes are usually applied in large quantities. Of course, none of their constituents can escape into the air. The loss through leaching away in the water which percolates through the soil is very slight. They therefore remain, furnishing the crops with plant-food, and improving the condition of the soil for years, until they are themselves consumed. Hence their lasting usefulness.

Below are figures by Wolff, representing averages of European analyses (mostly German) of wood ashes. Analyses of ashes of peat and anthracite coal are also given, for comparison.

ASHES FROM 100 LBS. CONTAIN	Water.	Potash.	Soda.	Lime.	Magnesia.	Phosphoric Acid.	Sulphuric Acid.	Silica and Sand.	Chlorine & Fluorine.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Evergreen Trees	5.0	6.0	2.0	35.0	6.0	4.5	1.6	18.0	0.3
Deciduous Trees	5.0	10.0	2.5	30.0	5.0	6.5	1.6	18.0	0.3
Leached Ashes	20.0	2.5	1.3	24.5	2.5	6.0	0.3	30.0	....
Peat	5.0	1.5	0.8	?	1.5	0.6	1.3	?	0.2
Anthracite Coal	5.0	0.1	0.1	?	3.0	0.1	5.0	?	....

The above analyses of wood ashes differ somewhat from those of the ashes ordinarily produced in household and furnace fires. The percentages of phosphoric acid, particularly, are much higher than those of common wood ashes.* The amounts of phosphoric acid, as well as of some of the other constituents of ordinary wood ashes as obtained from household fires in this country, are illustrated by the following analyses by Prof. Storer.* Nos. I and II were "from soap boilers' stores," and, of course, mixtures of various kinds as gathered promiscuously from houses. The rest were carefully taken from stoves and furnaces in private dwellings in New England, except IX and X, which were from Illinois.

WOOD ASHES, (Unleached.) SOURCES, KINDS OF WOOD, ETC. 100 lbs. contain.	Potash.	Phosphoric Acid.	Carbonic Acid.	Sand and Charcoal.
	lbs.	lbs.	lbs.	lbs.
SOAPBOILER'S ASHES.				
I.—Collected from Houses	6.3	3.4	....	....
II.— " " "	6.1	3.0	....	....
FROM HOT-AIR FURNACES IN HOUSES.				
III.—Beech, Birch, and Maple, mixed	10.4	1.5	28.4	5.9
IV.—Hard Wood, chiefly Oak	8.5	1.7	21.9	14.1
VI.—Rock Maple	8.8	2.0	28.7	1.3
FROM HOUSE STOVES.				
V.—Mostly Red Oak, (open fire,)	8.6	2.0	30.7	7.8
VII.—Maple and Apple	8.4	1.8	....	....
VIII.—Beech	9.5	2.8	....	....
IX.—Pin Oak, (green wood.)	9.0	2.2	23.4	11.9
X.—Pin Oak, (dry wood.)	7.4	0.7	20.3	5.1
XI.—Apple, (old trees.)	9.1	0.4	28.3	2.7
XII.—Pitch Pine	10.8	4.2	....	....
XIII.—Alder	6.8	2.3	....	....

Leached ashes differ from unleached chiefly in containing less potash and more water. Below are some analyses by Prof. Johnson.†

LEACHED WOOD ASHES. 100 LBS. CONTAIN	Water.	Potash.	Soda.	Lime.	Magnesia.	Phosphoric Acid.	Sulphuric Acid.	Carbonic Acid.	Sand, etc. Coal,
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Sample from									
Deer River, N. Y.	35.0	0.8	0.2	29.7	3.4	1.3	0.0	19.9	8.9
Canada	35.0	2.3	0.0	2.1	3.3	1.3	0.2	18.2	9.9
Canada	35.0	0.7	0.0	23.2	2.9	1.4	0.1	17.1	18.1
Soap Factory, New Haven, Ct.	35 0	0.9		21.3	4.1	1.1	0.1	20.2	30.7

From the above analyses and other data, which we have not room to discuss here, we may assume the following figures as expressing accurately enough for practical purposes the average percentages of the valuable ingredients of plant-food in wood ashes as obtained from household fires, or commercially, in this country.

WOOD ASHES, 100 lbs. contain on the average	Potash lbs.	Lime lbs.	Magnesia. lbs.	Phosph'c Acid. lbs.	Sulphuric Acid. lbs.
Unleached	7 to 10	32	5	2	1¼
Leached	1 to 2	25	3½	1½	1-3

A bushel of unleached ashes weighs, on the average, about 48 lbs. A "struck" bushel of leached ashes will average some 57 lbs., and a "heaped bushel" about 71 lbs. A dressing of 50 bushels of unleached ashes to the acre, at 48 lbs. to the bushel, would give some 200 lbs. of potash; 768 lbs. lime; 120 lbs. magnesia; 48 lbs. of phosphoric acid, and 36 lbs. of sulphuric acid. A manuring of 60 bushels of leached ashes, at 60 lbs. to the bushel, would furnish about 54 lbs. of potash; 900 lbs. of lime; 126 lbs. of magnesia; 54 lbs. of phosphoric acid, and 7 lbs. of sulphuric acid. Either of these would cost but little more, and, in many places, not nearly as much as an ordinary dressing of guano or superphosphate. The main value of the guano or superphosphate would be in the nitrogen and phosphoric acid it contains and supplies directly to the plant. The ashes would contain about as much phosphoric acid and would supply nitrogen indirectly, as explained above. In addition to this, the ashes would yield a large quantity of potash, of which the guano would contain little and the phosphate probably none, considerable magnesia, and a

* The reason of this is that the analyses refer more to the ash as prepared for investigation, by careful burning in the laboratory, so that all the phosphorus of the wood remains in the ash as phosphoric acid. In ordinary fires a good deal of the phosphorus of the wood is lost, by being volatilized and carried away in the draft, or changed to other forms of combination than phosphoric acid. Household and furnace ashes also contain considerable coal sand and other impurities, which do not occur in the samples prepared in the laboratory. Wolff's figures, above given, evidently make allowance for these latter contaminations, however.

* An exhaustive treatment of this subject by Prof. Storer may be found in the "Bulletin of the Bussey Institution of Harvard University," Vol. I, page 191. See also accounts of composition and fertilizing effects of ashes in other parts of same work.

† From Report of Conn. Board of Agriculture, 1872, p. 417. The original samples varied in the percentages of water, but the analyses are calculated on a basis of 35 per cent, which is probably a fair average. The last sample had an admixture of anthracite coal ashes.

very large amount of lime. The guano and phosphate would probably be more rapid in their action, but their effect would soon be gone, while that of the ashes would last for years.

A word of practical application. Ashes are useful for any crop, from roots to fruit. On newly seeded grass land they often work wonders. They may be used as a top-dressing or put in the hill or plowed or harrowed under. They are excellent for composts also. Here in Connecticut, where guano, phosphates, fish, and the like, can be bought very cheaply, many of the best farmers prefer to use ashes, even when they have to pay twenty cents per bushel or more for the leached. And where, as in some places I know, guano costs $70.00, a good superphosphate $45.00 or $50.00 and bone about as much per ton, and ashes are only 12 to 18 cents per bushel, I should advise the use of the ashes by all means. Of course, for forcing early crops, guano, phosphates, and other quickly acting fertilizers, when used in small quantities, may pay better. But, generally speaking, at such prices as the above, ashes will be far preferable for a standard manure.

W. O. ATWATER,
Wesleyan University, Middletown, Conn.

The Fairs the Farmers' Schools.

Hundreds of letters come to us yearly, asking about matters and things which are very fully exhibited at the Agricultural Fairs every fall. A farmer who observes the live stock, implements, machines, and other interesting objects at these exhibitions, and makes a study of them, will gain much valuable information. Those who attend the fairs, with their goods and live-stock, are pleased to have them seen and examined. It is their business to show what they have on exhibition, and we never yet knew one of them to give an impatient or churlish reply to any civil inquiry made of them; but on the contrary, have always found them eager to impart information. Now this information is precisely what every farmer wants. He needs to be instructed about the differences in character and value of live stock, the uses and working of implements and machinery, the value of improved grains and other products, the kinds of artificial fertilizers offered by the manufacturers, and scores of other matters, not only of great interest, but of value in his daily business. Then, farmers need to meet together and talk with one onother about these things, and compare views. It is hardly possible for any two farmers so to discuss matters relating to their business without mutual benefit. The County or State Fair, is the place of all others for farmers to meet with one another, and also to meet those who provide them with implements and various other supplies. By all means let every farmer not only attend the fairs, but use all his faculties when there, in the effort to learn every thing that is possible. A fair is a great school for the farmer and his family.

Ogden Farm Papers.—No. 91.

BY GEORGE E. WARING, JR.

The subject of the escutcheon or "milk-mirror," as a test of the quality of the milch cow, is just now receiving much attentian. Mr. L. S. Hardin has attacked Guenon's theory in a really savage way, and he has aroused quite a storm of correspondence, which is preponderatingly in its favor. It has been suggested that we do not need to adopt all the minutiæ of the theory, for we do not care anything about the comparative tests of third and fourth rate cows. The only ones we want are those of the *first* class, and it is a very simple matter to learn enough, to be able to see at a glance if any given escutcheon is first-class or not. We shall act wisely, as a rule, if we let all except the first-class ones go. We *may* make occasional mistakes. There may be some very good cows with very bad escutcheons, but I think the forty-years' experience of the best dairymen of the world, has established the fact, that there is much more in the Guenon theory, than in any other outward indication of quality. I believe that those who have made it a fixed rule of action, to own no cow, and to raise no heifer, which has not a *first-class* escutcheon, have to-day the best milking herds.

It may even be doubted, whether it is essential to good success, that we should give our attention to so much detail as is needed to determine even to which *class* a cow belongs, for the fundamental principle seems to be, that the quantity of milk, and the continuance of the flow, after the cow gets with calf, is chiefly indicated by the *area* of the escutcheon, whatever may be its shape; that is to say, that the amount of surface covered by hair growing in a direction that leads away from the teats, indicates the extent of that system of blood vessels or secreting organs, which act in the conversion of blood into milk. Practically, it seems not to make a very great difference, whether the surface so covered (the escutcheon) extends up to a good width and on both sides of the vulva, or whether it reaches out far on the thighs. Mr. Charles L. Sharpless, of Philadelphia, has advanced the suggestion, that the surface covered by a reversed growth of hair in front of the udder—out on the belly—is as important as that which shows from behind. With this idea in mind, we may safely be guided, in judging of the comparative value of two cows, by the relative amount of space so covered, whether such covering indicates any different conformation of the underlying vessels or not. When the purpose is not to compare two cows with each other, but to decide the individual merit of a single cow, then I should say that we should seek the fullest possible development of the escutcheon—one which runs up of good width, enclosing the vulva, which runs out well on to the thighs, and which reaches well forward on to the belly.

Guenon refers to certain "bastard" marks, which are of different character in the different "orders," and which, it seems to me, require more study than any one is likely to give, who is not endeavoring to make himself an expert in the matter. In my own case, and so far as I know in the case of friends who adhere to the system, not much attention is paid to these marks. It is quite likely that we should, all of us, find our account in studying this part of the system more minutely; but it seems the most desirable thing about the whole matter, that the people at large should attend to the leading idea, and regulate their breeding, and their buying and selling, according to its broader teachings. To this end, I should say simply: "Learn in the first place the difference in appearance between the escutcheon and the parts surrounding it; ascertain the standard of the largest escutcheon of the breed of cattle in which you are interested, and then try to secure a stable full of animals, approaching as nearly as possible to this standard."

It is one of the most important things in connection with this subject, that the escutcheon is well defined, even in the fuzzy coat of the new born calf, and that so far as this indication is relied on, we may at once determine whether the calf is to be kept or killed. In the calf, the upper part of the escutcheon shows for its full value, but it does not spread to its full width over the thighs until, as maturity approaches, the filling of the udder, and the development of that part of the body, spread it out. By turning the calf on its back, we may readily see the extension of the escutcheon toward the navel and the flanks. We may also judge of the size, position, and uniformity of the teats—a very important indication.

A letter from Belchertown, Mass., asks, "which is best for a creamery, to bring water (in which the mercury will stand at 50°) 800 feet through a loamy soil, or to adopt Hardin's plan? Would not covered pails be better than cans, on account of skimming?"

My advice would be to use the Hardin plan, or the Cooley, or some equivalent, only where a satisfactory supply of cold water can not be obtained. Even where water has to be pumped by a windmill or water-wheel, I should be disposed, if it could be delivered at a temperature of 50°, or even 55°, to prefer this system, if only for the sake of its simplicity. Where water can be brought by gravitation—in sufficient quantity—I should not hesitate a moment to make use of it.

The cost of laying a wood or cement, or vitrified pipe 800 feet, where the digging is easy, would be trifling, compared with the value of the permanent result. With a good stream of water, at 50°, we should be safe for winter and summer. Narrow cans are better than pails, because their smaller diameter brings their contents more readily under the influence of the temperature of the surrounding water. There is no difficulty, whatever, about skimming. A conical dipper, about one inch less in diameter at its top, than the diameter of the can, will usually take off the whole of the cream in two dippings, and with little labor and attention.

There seems to be quite a revival of interest in land drainage, especially in places remote from tile-factories, for I have a number of letters asking information about the making of tiles at home, especially about machines for molding them. Concerning the construction of the die-plate of the tile-molding machine, I hardly know how to make the subject more clear than I have done on page 180 of my book "Draining for Profit and Health," illustrated in figure 43. The die-plate, which forms the front of the box holding the clay, may be made of a piece of boiler iron, with one or more holes of the size of the outside of the tile. Projecting through this hole, and firmly attached to a crutch which straddles it, and is bolted to the plate, is a plug of the size of the bore of the tile. The annular space between the plug and the sides of the hole, represents the substance of the tile, the clay being forced through this space in a solid and continuous mass. For a small hand machine, it would probably be better to have only one hole—making but one line of tiles at a time.

It is always pleasant to receive a new book which has even a collateral bearing upon the industry in which one is interested. Being especially a butter dairyman, and having a large amount of skim-milk and butter-milk to dispose of, I was very glad to get Coburn's "Swine Husbandry," just issued by the Orange Judd Co. So far as I have been able to examine it, it strikes me as being, on the whole, the most comprehensive work having special reference to the needs of American farmers, that I have yet seen. It is especially to be commended to Western pork raisers for its valuable papers on the so-called "Hog Cholera."

We hear a great deal about the depredations of the grasshoppers at the West, but if our Western neighbors have this beam in their eye, we have at least a mote in our own, to which I fear we pay too little attention. Our Eastern grasshopper is getting to be something more than a serious nuisance. Last summer we put into the barn about 95 tons of hay. The haying season was followed by a severe and protracted drouth. Remembering the old adage, "drouth never made dearth in England," and having a good supply of green-fodder for soiling, we looked forward with lively hope to another good hay crop this year. Day by day the grasshoppers—whom we have always with us—increased. They seemed to find on our heavily manured land a better foraging ground than on some half abandoned farms in the neighborhood, and they congregated from all sides, until we were fairly over-stocked with them. In walking across the fields, we fairly threw up a spray of these insects. They ate the young grass as fast as it grew in such hot and dry weather—and they then set to work and ate crown and roots fairly down into the ground. As a result, we have this year mowed acre after acre bearing nothing but weeds, where we last year had good grass, and the extent of our loss will be understood when I say that we have this year housed only 25 tons of hay. Fortunately, our cured oats have yielded very well, and fodder-corn is unusually promising, so that we hope to carry our stock through the winter without difficulty, but the insignificant eastern grasshopper may fairly be charged with our loss of not less that 50 tons of hay, which could have been sold here for $1,000.

A Farm House Costing $5,000.

BY S. B. REED, ARCHITECT, CORONA, LONG ISLAND, N. Y.

The plans here given were originally designed for the residence of Mr. F. H. Johnston, Easton, Md. They will interest those desiring a good-sized, comfortable farm-house. ....**Exterior,** (Figure 1). — The site in this case being midway between the highway and a water front, (facing a tributary of the Chesapeake,) made it desirable to have two main entrances, adapted to either approach, and indicated the position of the kitchen wing at the *side*. The Conservatory is in an angle facing the Southeast. The Piazza and Roof Projections are of ample breadth to give abundant shade, and proper effect. As a whole, the outlines are rounded and compact, indicating completeness and strength—always desirable features in buildings of this class....**Cellar,** (Figure 2). — Hight of ceiling 8 feet. It has 13 windows, and outside and hatchway doors. Openings in the chimneys provide ventilation. The ceilings are plastered, to prevent the ascent of damp and unwholesome vapors through the frame-work of the house....**First Story,** (Figure 3). — Hight of ceilings in the main house, 11 ft. 4 in., and in the wing 9 ft. The main entrances lead from the piazzas, through large double doors, to the principal Hall, which is wide, and extends unobstructed, through the house. The main stairs occupy the space at the right, which is separated by an arch that preserves the continuity of the hall

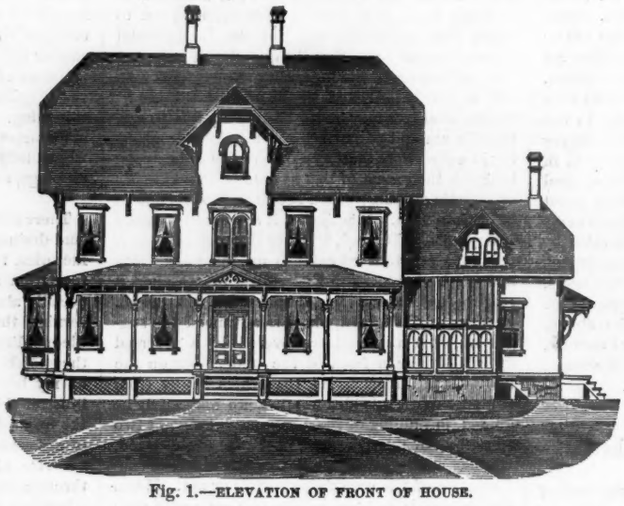


Fig. 1.—ELEVATION OF FRONT OF HOUSE.

in the main house 10 feet; in the wing 9 feet. The divisions embrace six rooms, six closets, and the required halls. The platform of the main stairs is level with the second floor of the wing, and from it a door leads to the wing passage. The Bath-room has a bath-tub, wash-stand, and seat-closet, and a good-sized closet for toweling, etc. All closets have the usual shelving and hooks. Each chamber has marble shelves and stucco trusses....**Attic.** —The stairs leading to this story are above the main flight, inclosed with narrow ceiling, and have a door at the foot. There are two circular windows in each end gable, and one in each front. The whole is floored, but otherwise unfinished, to be used as an open garret....**Construction.**— The excavations are 4 feet deep, and the loose earth thrown out is neatly graded around, leaving three feet of the foundations exposed to sight. The Foundations are of hard burned brick, 12 inches thick for the main house, and 8 inches for the wing and conservatory. Brick piers, 12 inches square, are built for the piazza supports. The first story frame-work is beam-filled with bricks, where they rest on the foundation. This prevents draughts of air from entering the house between the foundation and the frame, and also keeps mice out of the frame at this point—*the latter is especially necessary along the lines of the main partitions.* The chimneys are of hard brick, arranged with continuous flues from each fire-place to the top. Tin 8-inch pipes, with the necessary elbows and register boxes, are inserted while building, to convey warm air from the cellar to the large chambers in the second story. The frame-work is constructed in the most thorough manner, of sound pine or spruce timber. The siding is of clear pine clapboard, laid on sheathing felt. Cornices of dressed pine. Principal roofing of cedar shingles. Piazza and bay window roofs of tin. Flooring of narrow yellow pine. The first and second stories are completed in every respect, ready for occupation. Each of the principal rooms and the main hall have stucco cornices and centers. Arches with neat ornamental corbels, are built across each bay window, over the L adjoining the main hall, and at the entrance of the passage leading to the bed-room in the second story. All sashes are 1¼-inch thick, and glazed with four lights in each pair. Blinds (outside) are properly hung and fastened to each window above the cellar. The Conservatory is substantially constructed of light frame-work, with no superfluous dressing to obstruct the light, and glazed with plain, single-thick glass at the sides, and ribbed glass for the roof, has a narrow walk of slat-work leading from the dining-room door, and is arranged to be heated in winter from a furnace in the cellar. All parts usually painted, have two coats of best paint, of color and materials selected by the owner.

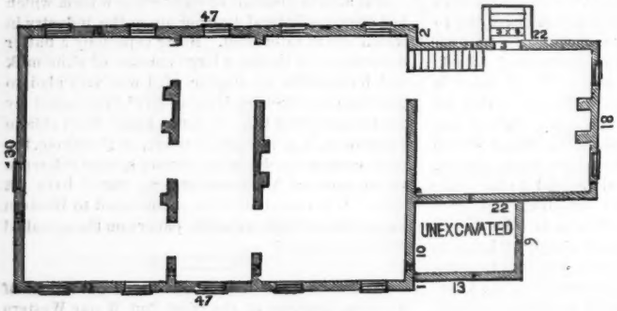


Fig. 2.—PLAN OF CELLAR.

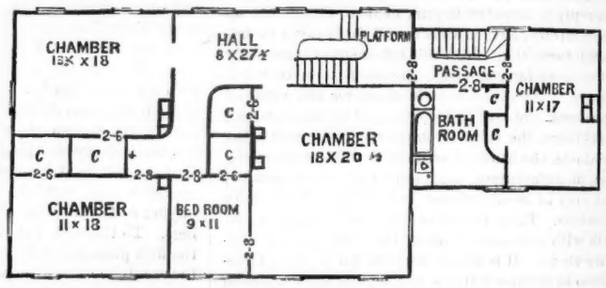


Fig. 4.—PLAN OF SECOND FLOOR.

ceiling. The ordinary or family entrance, is by way of the Passage, and is convenient to all the parts of the house in daily use. A private stairway leads from the passage to the second story. The Parlor and Library are separated by sliding doors, and each has a bay and other windows. The Dining-room at the right, is pleasantly arranged; it may be entered from the main hall, or through the conservatory, or by the passage, or through the butler's pantry. Wide double sash-doors lead to the conservatory, and single sash-doors open to the piazza through the passage.—The Kitchen has doors leading to the passage, butler's pantry, cellar, and yard, and has three windows. It is provided with a range, pump, boiler, wash-tubs, and sink. The Butler's Pantry is spacious; one end is dresser finished, with counter-shelf and doors above and below. A counter-shelf is also placed at the opposite end, with wash-tray and closet. The sides are shelved around, and have cleats and hooks....**Second Story,** (Figure 4).—Hight of ceilings

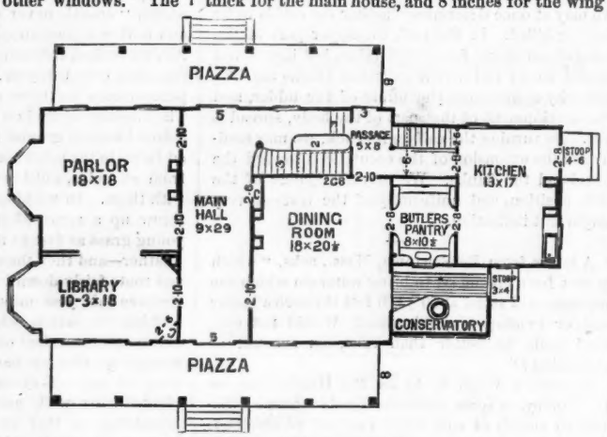


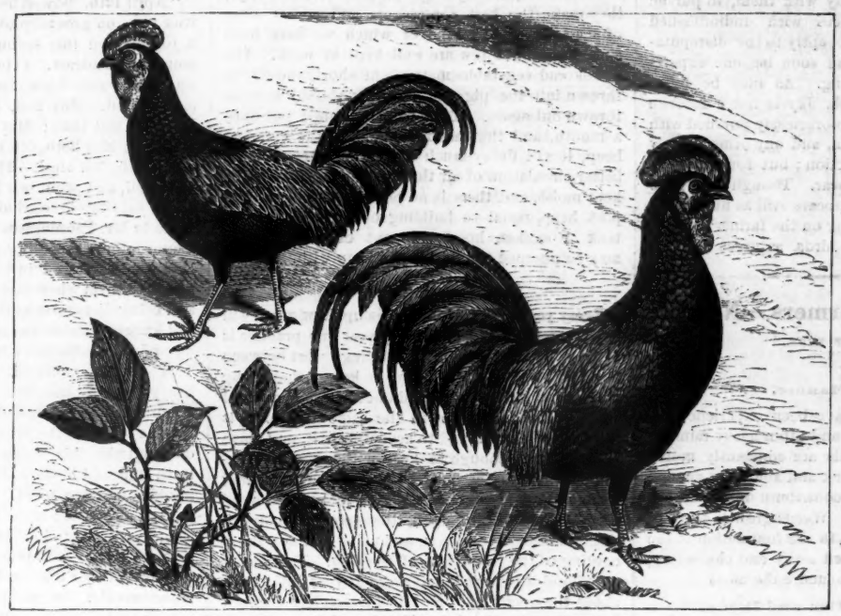
Fig. 3.—PLAN OF FIRST FLOOR.

Estimate: cost of materials and labor.

268 yards excavation at 20 cents per yard		$53.60
50,000 bricks, (furnished and laid,) at $12 per M		600.00
88 ft. bine-stone, at 30c. per ft		26.40
1300 yards plastering, at 28 cents per yard		364.00
175 do. do. cellar ceiling, at 16c. per yard		28.00
330 feet cornices, (complete) at 20c. per foot		66.00
4 centers, (complete), at $4 each		16.00
14,300 feet of timber, at $14 per M		200.20
Sills, 4x10 in. 276 feet long.	50 beams, 3x10 in. 19 feet long.	
Ties, 4x6 in. 490 feet long.	8 beams, 4x10 in. 19 feet long.	
Plates 4x8 in. 138 feet long.	10 beams, 3x10 in. 18 feet long.	
Perlines, 4x9 in. 214 feet long.	1 beam, 4x10 in. 18 feet long.	
Ridges, 3x9 in. 67 feet long.	11 beams, 3x9 in. 18 feet long.	
Ridges, 3x7 in. 20 feet long.	28 beams, 3x9 in. 19 feet long.	
Gables, 4x6 in. 200 feet long.	28 beams, 3x10 in. 10 feet long.	
4 posts, 4x8 in. 26 feet long.	14 beams, 3x9 in. 10 feet long.	
8 posts, 4x8 in. 23 feet long.	78 rafters, 3x6 in. 25 feet long.	
4 posts, 4x7 in. 13½ feet long.	34 rafters, 3x5 in. 15 feet long.	
2 posts, 4x7 in. 12 feet long.	Braces, 3x5 in. 240 feet long.	
175 joists, at 18c., $22.75; 400 wall strips, at 10c. $40		62.75
800 lbs. felt, at 4c., $32; 800 siding, (clapboards) 10c. $80		112.00
Cornice materials		120.00
500 rough roofing, at 14c. each		70.00
12,000 shingles, at $10 per M		120.00
11 squares tin at $9 per square		99.00
450 feet valleys, gutters, and leaders, at 10c		45.00
5,366 ft. flooring, at 3c. per foot		160.98
13 cellar windows, complete, at $6 each		78.00
30 plain windows, complete, at $12 each		360.00
2 bay windows, complete, at $60 each		120.00
2 dormer windows, complete, at $20 each		40.00
4 stairs, complete		136.00
38 doors, complete, at $12		456.00
Piazzas and stoops, (exclusive of floors & roofing)		250.00
Conservatory, (complete)		150.00
Mantles, (complete)		102.00
Pantry and closets, (complete)		75.00
Nails, $24; Carting, average 1 mile, $50		74.00
Range and plumbing, (complete)		250.00
Carpenter's labor, not included above		150.00
Painting		272.00
Incidentals		29.07
Total Cost, complete		$5,000.00

The East Indian Jungle Fowl and Hybrid.

The East Indian Jungle Fowl is closely related to our domestic fowl, and of some particular breeds it is a direct progenitor. If any doubt of this has ever existed, it is dispelled by the fact that this wild species will breed with the common domestic hen, and produce fertile hybrids. In the accompanying engraving we give portraits of a pure Jungle cock—the smaller bird—and a hybrid cock produced by the union of the former with a common hen. The birds, of which these engravings are portraits, are now, or were lately, in the Zoological Gardens in Regent's Park, London. The Jungle fowl is of the species known as the "forked tail fowl of Java"; the *Gallus furcatus* of the naturalist, Temminck, and *Gallus varius*, of Shaw, the latter name being considered by good authorities as the more correct one. This species differs from all others of the genus *Gallus*, in having but a single wattle, placed between the mandibles, instead of one being placed upon each side, as is usual with other fowls, and also in having the tips of the neck hackles square instead of lance-shaped. The color of the plumage is also unique, exhibiting very bright metallic hues in the sunlight. The head, neck, and upper part of the back, are of bright metallic green, each feather being margined with black; the rump and upper tail coverts are black in the center, with the margins of both webs yellow; the tail sickle-feathers are much curved, as narrow as in a good game cock, and in color are a metallic green, with black along the shaft. The central tail feathers are black on the inner webs, and bright green on the outer. The smaller wing coverts are red with black centers, in some specimens the edges are yellow. The ten primary quills are dark-brown, the secondaries are black, lightly edged with red, which is shown when the wings are closed. The whole of the under parts are black; the comb and wattle are very singularly colored, being green next to the head and throat, and red and yellow below; the comb is smooth, and without serratures; the bill is horn-color, and the legs flesh-color. As may be seen by the portraits, the hybrid partakes very much of the character of the male parent, but it is larger, having a fuller tail, longer saddle feathers, and lance-tipped hackle. The hybrid is less wild in appearance than the parent, and has more of the sedate composure of our domesticated species.



THE JUNGLE FOWL AND HYBRID WITH DOMESTIC FOWL.

Several young birds were hatched from eggs fertilized by the hybrid here figured, and another one, last year; and the noted English poultry fancier, Mr. W. B. Tegetmeier, hopes that a beautiful addition to our poultry yards may in time be produced from the hybrid race. The original portraits from which these were photographed, were published in the "London Field" about a year ago. The birds themselves are in the Regent's Park Zoological Gardens, and there are none for sale anywhere, either in Europe or in this country.

The Oregon Blue Jay—Steller's Jay.

BY DR. F. S. MATTESON, COQUILLE CITY, OREGON.

The Jay of this coast, and the only representative of the sub-order in this valley, is *Cyanura Stelleri*, or Steller's Jay. It inhabits the western watershed, from the summit of the Rocky Mountains to the Pacific, and from Russian America to Lower California. The plumage of the bird is thus described by Coues: "Sooty-brown, darker on the the head, passing insensibly into rich blue on the rump, and below from the breast. Wings and tail deep Prussian blue, with black bars (wanting in very young birds); crest faced with some blue touches, and throat with some whitish streaks; no white on the eye-lids; tail moderately rounded; crest about two inches long when full grown."

THE OREGON OR STELLER'S JAY.—(*Cyanura Stelleri.*)

The blue color of this bird is only on the parts of the feathers which are exposed to the light. Inside of these they are of variable shades of sooty-brown. The secondaries and tertiaries are barred with black, as are also, but indistinctly, the upper surface of the tail and the greater wing coverts. The under surface of the tail is sooty-brown, while the corresponding surface of the wing is ashy-brown. The bill is 1¼ inch long, black, corneous, strong, tapering, acute, with both mandibles of equal length and meeting at a point. The nostrils are closely covered with bristly tufts. The eye is black, and its expression "wicked." The crest is 1¾ inch long, pointed, and directed backward, but can be erected or depressed at pleasure.

The specimen from which the accompanying engraving was made, is 12 inches long, expanded wings 16 inches, tail 5 inches. The legs are covered to the heel with short, sooty-brown feathers, with a tinge of blue on the outer and front sides. The feet and tarsus are black, the latter scaly in front, and separated on each side from the rest of the tarsal envelope by a well defined groove. The female mainly differs from the male by being a shade lighter in color.

This bird frequents both forest and field. It is a noisy, thieving pest; a marauding vagabond of the first water. It is a voracious glutton, and eats anything that he can overhaul. It opens a nut by holding it in its claw, placing it on the limb it is perched on, and raising to its full hight, brings down the sharp point of its beak in a steady succession of vigorous blows, until the shell is broken. It pulls up the farmer's young wheat, corn, peas, etc., in early spring; steals the eggs of the hens in summer, and forages on the grain accessible to him at all times. It robs the nests and eats the young of birds weaker than itself, and makes itself obnoxious generally. Merciless and cowardly among its feathered neighbors, feared by the weak, and hated by the strong, it is constantly employed either in forays upon the defenseless, or using its wings vigorously to escape from some well deserved punishment. When frightened from its thieving raids, it flies rapidly to the cover of the nearest thicket, calling out loudly and defiantly, "kwak, kwak, kwak," but as soon as concealed from view, it remains silent. It does not sing (it has not this redeeming quality), but its notes are many and varied. It cries, "Jay, Jay, Jay," with great distinctness. It also says, "steal it, steal it,"

and will surely do it, if opportunity offers. In summer the Jay retires to the recesses of the forests to breed, where it builds a nest of sticks, moss, etc., in the midst of a thick-topped bush. The eggs are of a blue color, and from four to six in number. Returning, after the incubating season, they bring their family with them, to pursue their free-booting practices with undiminished energy. The progeny take aptly to the disreputable ways of the parents, and soon become experts at thieving and plundering. As may be inferred from its character, this Jay is not a favorite with the settlers, and is remorselessly pursued with guns, traps, poisoned grain, and any other agency which promises its destruction; but for every Jay killed, twenty others appear. Though war goes on, the ever present Jay appears still as numerous, and his capacity for feeding on the farmer's crops, and the eggs of singing birds, as great as ever.

Among the Farmers.—No. 20.

BY ONE OF THEM.

Making Manure.

Such a season as we have been experiencing—showers every day or two, and often heavy rains, so that our light, gravelly soils are constantly moist. Such a season produces rank and abundant vegetable growths, which may contribute much to the bulk of the manure heap. Weeds grow in the garden, along the hedge-rows, in the foundation of the old barn, long since pulled away and cleared up, and the problem is how to secure the most

Rapid Fermentation and Decay.

There is always the danger, that in the decay which naturally comes on when succulent vegetation lies in masses through which the air can circulate, the mass will pack so tightly, that the larger and more woody stems will become enveloped in the wet mass, and so, the air being shut out, will decay no more, but remain like so many ropes, forming a mass which it is almost impossible to handle with forks or shovels. The remedy for this is simple. The contents of these weed compost heaps must be cut in foot lengths, just as we handle corn-stalks in winter. The weed-stems may be cut with a sharp spade on the ground. This works well, and is often the best way, because there is the least work in it. Another good way is, when there is a patch of tall weeds to be cut, to cut over the ground two or three times. The first time the mower clips off all the soft tops, a foot or twenty inches long, perhaps, then the stems are cut about eight or ten inches lower down, and finally close to the ground. This leaves the material in the best possible shape for the compost heap; it may be raked up and loaded upon the cart without difficulty, it may be laid up nicely in the heaps, and, when decayed, may be easily overhauled.

The secret of rapid decay is no secret, so to speak. It is one of those "secrets," or "hidden mysteries" of nature, which, when we really come to investigate, we find we knew all about before. Dry things do not decay, neither do water-soaked things. When we pulled the old barn down, two or three years ago, I found some of the thatch, that had been turning the water for thirty years or more, sweet and dry, and used it for bedding in the stables; and on the other hand, Cæsar's bridge timbers in the Thames, and the piles driven by the Lake-dwellers in Switzerland, the former 2,000, and the latter perhaps 10,000 years old, and still sound, indicate that water is a first rate antiseptic. Now air and water together being essential to rapid decay, our art is to lay up our compost heaps so that we can make them wet, and partially dry them alternately, bringing all parts under the combined influence of air and moisture. A few layers of horse manure, thrown in as the heap is built, having the depth of about two inches each, greatly expedite the decay. As soon as the first good heat is over, there will be a lack of water. The succulence of the plants themselves, afford moisture enough for this first and most active heating, and rains may supply water to keep the decay in active progress, for some time, but the heap will gradually dry out, and ought to be "cut" over and relaid with fresh material, and given a good soaking at least twice during the season.

Swine as Manure Makers.

When a sufficiently large herd of swine is kept, they make the best composters and workers-over of material of the kind of which we have been speaking, and a few are well kept at work. The weeds and vegetable matter, cut short, should be thrown into the pig pen, but they should soon be thrown out again. If the pen be cleaned out once a month, and the manure added to the compost heap, it will decay much better, for there will be better circulation of air through it; but it must be kept moist, and there is no plan for making a compost heap, equal to building one over or near a tank or sunken hogshead, out of which water may be pumped to moisten the heap with.

Hay Cured, not Dried.

Every year the problem comes up, how green will it do to get in hay? and every year our practice is to get it in with less and less drying. Cut between 4 and 8 P. M.; the next day, if heavy, shaken up and turned before noon, and once after, then raked up at 3 P. M., and got in the same afternoon, is pretty quick work, and to accomplish it, and have the hay cured enough to keep without salting, requires a hot, drying day. I have just had excellent luck, cutting late one day, raking into windrows at about noon, cocking up by three o'clock, and getting in the next forenoon, and using salt or not, according to the condition of the hay. This hay is cured and little dried, and there is very little work about the operation. Salt has a wonderful effect. I do not understand it. The hay "sweats" well, but if salted rarely molds, or gives off any but fragrant odors. It does not seem to me that the salt could come in contact with the hay so generally as to affect it all, and yet every lock seems to be preserved.

I have never used salt upon corn-fodder, but I shall do so this year, confident that four or five quarts to the ton will aid greatly in curing it, and prevent the necessity of so much drying. The finer the salt, the further it will go in salting hay. A handful of salt will penetrate through three feet of hay in the mow, as I have proved by experiment, and I presume if the hay were very dry, it would rattle down a good ways farther.

Harrowing Growing Crops.

I am old fogy enough to stand out pretty well against startling innovations. Though, I confess, like Daniel Boon's coon, I came down from previously held notions when John J. Thomas advocated harrowing field corn, and invented a harrow to do it with; but this harrowing of spring grain, particularly oats, has something in it so positively repugnant to general views of thrift, that I had no thought of giving it a trial, any more than of planting an acre or two of Prickly Comfrey, or adopting either flat culture or the "Ross system" for corn. We do not all think alike. Discussing crop prospects the other day with Mr. Devereux Pennington, of Bergen Co., he spoke of his oats, (everybody's oats are looking well), and said that after having been harrowed *seven* times, they were standing very evenly, waist high, all over the field, and that there were almost no weeds to be seen.

"What," said I,

"Seven Times Harrowed,

"What do you mean?"

"I mean just that," said he, "and besides," he added, "I have learned another thing in connection with this harrowing business, which I am surprised that you did not see the advantage in, as soon as the subject of harrowing spring grains was broached; that is, that top-dressing may be done at almost any time, well along into the spring."—Then he gave me the history of the particular field of which we were speaking, and afterwards a transcript of the memorandums in his Farm note book. It seems the ground, which is light, sandy alluvial, was plowed last autumn, and this spring top-dressed with manure compost over about one-third of the field. When he was ready to sow, he did not wait to finish the manuring, but having determined upon harrowing the crop several times, sowed the oats and harrowed them in, and then kept right on with the top-dressing.

The following are the memorandums:

"April 12th. Sowed 3⅔ acres with White Probstier oats, on ground plowed last fall, and part of it top-dressed this spring. Used 9 bushels of 32 pounds, broadcast. (The balance of the ground was afterwards top-dressed).—April 13th. Rolled oat ground.—May 2nd. Harrowed oats 1st time; May 7th, 2nd time; May 21st, 3d time; May 25th, 4th time; May 28th, 5th time; June 4th, 6th time; June 12th, 7th time.—The oats are now looking very well, and promise a large yield of clean seed."

The oats top-dressed after sowing, had—so it appears to Mr. Pennington—greater benefit from the manure than the others, where both manure and oats were harrowed in together, for it served as a mulch to them when just coming out of the ground, and being disturbed by the subsequent harrowings, and knocked about more or less, the weeds starting up under its influence were more thoroughly killed. This seems reasonable. The harrow used was a heavy, long-toothed common harrow, but it was not dragged promiscuously over the field, but every time as nearly in the same tracks as possible. After once or twice this became an easy matter, and the teeth followed in the old tracks, as we go and think in old ruts, from habit. Some oats were torn out at first, of course; some were buried past resurrection, no doubt; the harrow teeth cut furrows through them, and ranged the plants in phalanxes as if put in by a drill, and then in passing through subsequently, few were disturbed. The ground was disturbed, and weeds were killed by wholesale.

At the time of the last harrowing, the oats were 14 inches high, and were, as might be expected, pretty well flattened down by the operation. Still, as the "pusley" (I quote the word as being vernacular—purslane is too respectable a name for the "pesky" plant,) was just starting—showing its minute red leaves above the surface, this last harrowing wrought wholesale destruction by covering it with earth.

The action of a harrow-tooth in passing through light soil, is to throw a perfect shower of earth to either side, so that harrowing not only loosens the soil about the plants—a very beneficial operation, admits air, and with it warmth and moisture, but effects a very thorough destruction of weeds by burying them in their most delicate and vulnerable condition, that of the seed-leaf.

Not the least advantage of this system is being able to plow in the autumn. I have sometimes done this—that is, put spring grain on land plowed in the fall without plowing again, but have always felt—and so have the oats—that the ground was not really half prepared, and it is much more apt to be weedy than spring-plowed land. On our light sandy loams, we have to take care that the ground is not too much exposed to washing by heavy rains in winter, so there is much land on hill-sides which can not be plowed in the autumn under any circumstances. The harrowing, however, may be done as well on spring-plowed as on fall-plowed land.

Early Sowing of Grass and Grain.

Winter grain and grass seed may, and should be sowed as early as the ground is clear after the first of August. Grass seed earlier. When land is to be laid down to grass, I find that early seeding—say sowing in July rather than in September, if the ground is rich, makes all the difference between a fair crop of hay and next to none the first year. One rich piece of moist land, well manured, was last year sowed with Timothy and Swedes, about the middle of July. A big crop of roots was taken off, and this year, Timothy hay, at the rate of two tons to the acre, I should judge. The Clover sowed in the spring making no great figure.

Last year a piece of land of one of my near neighbors was manured in July for turnips, with manure from the barn-yard, which had accumulated since the yard was cleared out in the spring, and during the extreme drouth from which we suffered. A good part of the manure was rye chaff, mixed

with animal droppings. Grass seed was sowed at the same time, but like all the rest of the grass in this section, it was burned out and made no sign. Something started, it was taken for "barn-grass," or some coarse grass of the kind. The turnips yielded well, and the grass, to the surprise of every body, did not winter-kill, and was so green in the spring, that it was suffered to stand to see what it would come to. It proved to be rye. The chaff contained light seed which did not decay because the season was so hot and dry, so it was sown with the manure early in July. It was the earliest, tallest, and finest rye cut in our whole neighborhood. I conclude not that shriveled seed is the best—though possibly some people might argue that, for perversity, but that we can hardly sow too early.

Talks on Farm Crops.—No. 7.

By the Author of "Walks and Talks on the Farm," "Harris on the Pig," etc.

"Two years ago," said the Doctor, "you sowed wheat and rye together. What was the result?"

"The result," said the Deacon, "was a noble crop of rye, with a few heads of wheat scattered through it. I see nothing to be gained by it."

"I intend to give it another trial this fall," said I, "the wheat did not hurt the rye. I had apparently just as good a crop of rye as if no wheat had been sown. I sowed half a bushel of wheat, and one and a half bushels of rye to the acre. This year I propose to sow five pecks of each per acre."

You ask what I expect to gain by it? Let me say (1) that the land on which I propose to sow the wheat and rye, did not produce a good crop of wheat the last time it was sown. It winter-killed. And this was not the worst of it. The clover-seed failed. And you know what this means. It is bad enough to lose a crop of wheat and a crop of clover, but worse still to have thistles and other weeds get full possession of the land. The field, or rather part of the field, has not got over it yet, and will not until I get it down in clover and grass. (2) The land has been underdrained since it was last in wheat, and consequently we stand a far better chance to get a good crop of wheat; but (3) I do not feel at all sure of a good crop of wheat. But (4) I feel tolerably certain that rye will do well on this land. And (5) there is a good chance for wheat to do well. It will depend on the season. And so (6) by sowing wheat and rye together, I am pretty certain to get a fair crop of rye, even if the winter and spring are unfavorable for wheat. While on the other hand, if the season should be favorable, I should be likely to get a good half-crop of wheat and a good half-crop of rye. And (7) a good half-crop of wheat, and a good half-crop of rye, is better than a good crop of rye alone.

"That is all very well," said the Deacon, "but you did not get five bushels of wheat to the acre."

"True," said I, "but we had a good crop of rye. The truth is, the season was a very unfavorable one for wheat, and, as I said before, we did not sow wheat enough. The rye got full possession of the soil, and crowded out the wheat. This year I mean to sow less rye and more wheat."

Sowing wheat and rye together, is not a new idea. It has long been practised in Germany, where the crop is called Mezlins, and in some parts of England, wheat and rye were formerly extensively grown together. The crop was called "Monk-corn." I suppose because the brown-bread made from the mixture, was formerly used by the Monks, as it is to this day used in many English farm houses.

"Yes," said the Doctor, "and sweeter and nicer, and more wholesome and nutritious bread, when properly made, was never eaten."

"I can endorse all that," said I, "but of course I have no thought of raising this crop with any expectation of a demand for the mixture. But we have now machines that will take out *nearly all* the wheat from the rye. If I could grow a large crop of wheat and rye together, I should have no difficulty in getting at least ninety per cent of the wheat separated from the rye, and the remaining ten per cent being mixed with the rye, would at any rate be no injury to the market value of the rye for milling purposes. It would be more likely to add a few cents a bushel to the price of the rye."

There would be a *little* rye in the wheat, but not more than is found in average samples of wheat.

"But the wheat and rye," said the Deacon, "do not ripen at the same time."

"True," said I, "and that fact probably accounts for the opinion that the only way to get good monk-corn or mezlin flour, is to grow the wheat and rye together. It is claimed that you can not get good brown bread merely by mixing wheat and rye flour. The wheat and rye must not only be ground together, but grown together. When grown together, the crop would not be cut until the rye was fully ripe, while the wheat would be only just out of the milk conditions favorable for high quality in both."

Rye can be sown earlier or later than wheat. In this section it may be sown from the middle of August to the middle of October.

Light sandy, shallow, gravelly soils, that will not produce wheat, may yield a good crop of rye. Low, black, sandy alluvial soils, where wheat would be likely to winter-kill, or where, if it escaped the winter, would be likely to rust, or lodge, or be so late as to become an easy prey to the midge—on such land rye frequently produces a good crop. It is on just this character of land where I have seen the heaviest crops of monk-corn. If a farmer thinks his soil likely to produce good winter wheat, he will not sow rye. It is only in doubtful cases where rye or rye and wheat will be sown.

The preparation for rye is usually the same as for wheat. A clover-sod or a summer-fallow, is far more likely to give a good crop than when rye is sown after barley or oats.—"I have seen a good crop of rye," said the Deacon, "raised after potatoes."—"Yes," said I, "especially if the potatoes had been well manured, or the rye was dressed with two hundred lbs. of Peruvian guano, or superphosphate, per acre."

Mr. Orville Bailey, of Livingston Co., N. Y., once told me that he raised 64½ bushels of rye per acre. It was grown on land that had been in meadow for 20 years. It was broken up and planted to corn. The next year it was *prepared for tobacco*, but *not planted*. It was sown with rye early in August, and was eaten off by sheep during the winter. This is the largest crop of which I have any personal knowledge—25 bushels per acre is a fair yield. Mr. Bailey's land, though not manured for years, was unquestionably in good condition. It was, practically, summer-fallowed, was sown early, and, as the original intention was to use it merely for green fodder, I presume it was seeded heavily.

As to the amount of seed per acre, the Deacon, the Doctor, and other practical and theoretical authorities differ. The Deacon thinks five pecks abundant, while the Doctor, from observation rather than experience, says he would never sow less than 2 bushels, and if not sown until late, say the last of September, he would put on 2½ bushels, or if not until October, he would sow 3 bushels. When straw or green feed is the principal object, he would sow early and sow thick—say the 1st of September, and 2½ to 3 bushels per acre. Rye does not germinate so soon as wheat, and when sowing them together, this fact is a decided advantage. The wheat, if the soil is mellow and moist, has a chance to get hold of the ground before its coarser and hardier associate is strong enough to smother it.

"That is so," said the Doctor, "and I would advise you, instead of sowing, as you propose, 1½ bushels of wheat and 1½ bushels of rye, to sow 2 bushels of wheat and 1 bushel of rye. If your rye is too thick, the wheat stands a poor chance."

Rye is a capital crop to seed down with. The only decent catch of clover I have had of late years, has been with rye. I sowed last year on wheat, rye, and barley, and the clover on the rye was decidedly the best, wheat next, and barley last. I sowed Timothy with the wheat in the fall, and red and white clover in the spring. The Timothy did quite as well on the wheat as on the rye, but the clovers, sown at the same time in the spring, were decidedly better on the rye than on the wheat.

"It need hardly be said," remarked the Doctor, "that rye affords the best of all straw for bedding horses. It often brings a very high price. A farmer could well afford to sell rye straw and buy clover hay or bran with the money. The exchange would give him more food and richer manure. English farmers would raise more rye, did not a clause in their leases prevent them from selling straw."

"Rye straw," said I, "will keep horses cleaner than any other bedding, and will last longer than wheat, or oat, or barley straw, but I am not sure that, *for a farmer*, it is any better than wheat or other straw. It will *not absorb any more liquid* than wheat straw. The horse men like it because it is tough and keeps the horse dry and clean. It lets the liquid pass through. But this is not what a farmer wants, especially in bedding pigs and sheep, as we seldom have any arrangement for carrying off the liquid. We use straw as an absorbent, and wheat, oat, and barley straw, especially when cut into chaff, will absorb more liquid than long rye straw. From all which I argue that where there is a good demand for rye straw, it is well to sell it."

"Rye is often grown merely for the straw," said the Doctor, "and is said to be a profitable crop."

"It does not exhaust the soil so much," said the Deacon, "as when it matures. It is the seed that contains the nitrogon and phosphoric acid."

"True," said I, "but it is hardly safe to take it for granted that a crop of corn, when grown for fodder, or a crop of rye, when grown for straw, does not remove just as much nitrogen and phosphoric acid from the soil as when raised for grain. The grain exhausts the straw. I think that it will be found as necessary to have land rich to produce a large crop of corn fodder, or a large crop of rye straw, as to raise a crop of corn or a crop of rye."

In raising rye for soiling, or for eating off on the land by sheep in the spring, it is well to select the earliest, warmest, and driest land attainable, and get it into prime condition by plowing, harrowing, and rolling. The richer it is the better. Then sow early and quite thick, say 3 bushels per acre. It has never been a favorite crop with me in this section. Our springs are too short. It is the earliest crop we have, but it does not last long enough. It is no sooner ready than it is past its prime. If the sheep have plenty of mangels, they can wait until the clover is ready for them. If no roots are raised, or the crop is short, it would be well to put in an acre of rye for each fifty head of sheep.

If we could do as Mr. Bailey did, sow the rye on rich well prepared land, and pasture the crop at times, during the winter, and raise, as he did, 64½ bushels per acre, it would be one of the most profitable crops a farmer could raise. The straw is generally twice the weight of the grain, and is usually worth at least $15 per ton. Such a crop would net, above all expenses, at least $100 per acre.

An American Silo.

The description of a French method of preserving corn fodder, given in the *American Agriculturist* for June, 1875, has brought out numerous inquiries as to the possibility of using the same system here. Curiously enough, it is thought by many that the method is neither practicable, nor profitable for us, although the very same manner of preserving an article of feed, not unlike corn fodder in many respects, has been in successful use for several years by more than one farmer of our acquaintance. The feed referred to is brewers' grains, a substance quite as moist, succulent, and easily fermentible as corn fodder. If this can be perfectly preserved for many months, why could not corn fodder be as well preserved in the same manner? In the *American Agriculturist* of April, 1875, we described a model dairy barn, belonging to Mr. Brady, of Katonah, N. Y., to which is attached a silo, built upon the same principle as those in which the French farmers preserve their corn fodder. The only difference being, that the French silos are long and narrow, while Mr. Brady's is more nearly square. The long and narrow silo is undoubtedly the better of the two, but the difference in shape does not influence the

effectiveness of the silo, except in degree. We give an engraving (fig. 1), showing the shape and manner of construction of the Katonah silo, and at figure 2 the manner in which it is used. It will be

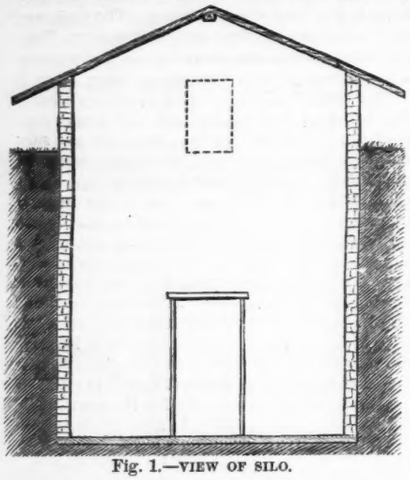


Fig. 1.—VIEW OF SILO.

seen that the only difference between the operation of this and the French silo, is, that the former has not so dense and compact a covering as the latter. A very close covering is not so essential with brewers' grains, as with corn fodder, because they pack much closer and exclude the air better than the looser corn stalks; but when the latter are cut up into chaff, and thoroughly well pressed down, a mere covering of planks, nicely jointed upon the edges, would be sufficient for the exclusion of the air from the mass below. It is always preferable to cut the fodder into pieces, not longer than one inch, for the reason that it then packs more closely and the preservation is more complete. The silo, shown in figure 1, consists of a sort of basement cellar, with the door opening into the cow-stable

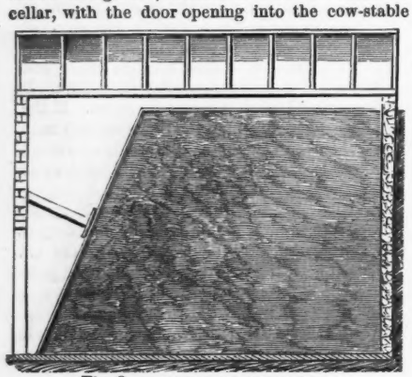


Fig. 2.—MANNER OF COVERING.

(Mr. Brady's farm is a milk dairy), and the rear sunk for the most part beneath the ground; a road passes the end of it, where there is a door, shown by dotted lines, for the purpose of unloading the grains. The walls are of stone, and the floor is of cement. The silo is covered with an ordinary shingle roof. The grains are packed in solidly, until they reach the level of the door at the top, when they are covered with boards, and some straw is thrown over the boards. When the grains are required, the lower door is opened, and the grains, as fresh as when put in, but somewhat sour, are dug out for use. As the mass is cut away, nothing is done to the surface which is left exposed to the air; but as the grains are very quickly used in this large dairy, there is not time for them to be injured, and the surface is made fresh every day by the removal of what was left exposed the day before. The same method may be applied to the preservation of corn fodder. As cut green fodder lies in a looser and more open mass than grains, it would be necessary to have a cover as nearly impervious to air as possible, for use when the silo is opened and the preserved fodder is in course of consumption. This may be easily done by means of wide planks, jointed smoothly at the edges, which should be laid upon the face of the mass of fodder as it is cut away. Pins may be inserted in a few of these planks, upon which another plank may rest, and the whole cover may then be pressed tightly against the fodder by means of a piece of timber placed with one end against the wall, and the other end resting upon the cross-plank, and thus made to act as a wedge. (This is shown in figure 2.) It will be necessary to cut away the mass of fodder smoothly and regularly, leaving an even surface for the planks to rest against. In packing away corn fodder in this manner, it would be very useful to mix a considerable proportion of cut straw with it, to absorb the superabundant moisture and to moderate the fermentation. It has been found in practice, that this plan serves to increase the feeding value of the straw, without deteriorating in the least the quality of the corn. It has also been proved, that the fermentation which the corn undergoes, changes some of its cellulose in character, and renders it more digestible, as well as transforms some of its starch into sugar, and some of its sugar into alcohol. The preserved fodder possesses an agreeable vinous scent, which is not at all distasteful, but rather otherwise, to the cows to which it is fed. When it is understood how easily this valuable fodder may be preserved, we shall look for the adoption of the method upon dairy and stock farms, where the food supply is a matter of serious consideration.

A Non-Freezing Pump.

In the *American Agriculturist* for March, 1877, we gave illustrations of some very excellent pumps which were so well adapted to a variety of uses that they were appropriately called "Universal" pumps. At this season, when we are necessarily on the lookout for proper appliances for use in the rapidly coming winter, a non-freezing out-door pump for the houseyard, the barnyard, or the field, will be a timely thing to consider. The pump here illustrated is one of this character, intended for wells from 20 to 200 feet deep, and is made by the manufacturers of the "Universal" pumps above alluded to, viz., the Nason Manufacturing Co., of Fulton st., New York. This pump is built in a remarkably strong manner, being protected by flanges or buttresses on four sides. This mode of construction gives comparative lightness with great strength. The barrel of the pump, as may be seen at figure 1, is very narrow, so that it is quickly filled, and as quickly emptied, which in cold weather tends to prevent the water inside from freezing, and also saves time in bringing the water. A tap, below the surface of the ground, permits the water to escape rapidly, as soon as the working of the pump is stopped; in winter this tap is kept open, but in summer it is closed. Ventilating holes are made in the well-cover, and the standard, as shown by the arrows, and these provide for a circulation of air in the well; as water may be drawn out of it, air enters, and thus the well is supplied with fresh air. These holes being placed high in the base, no vermin of any kind can enter the well. The handle is fluted, so that it can be attached in a moment to the rod of a windmill, by means of a clip and a set-screw, and as quickly released. Figure 2, shows the arrangement of air chambers and valves for a deep well, which are used with this pump. As the pump is wholly of iron, with the exception of brass cylinders, which are provided when desired, and very strongly made, although from its construction it is much lighter than would be supposed from its exterior appearance, it is excellently adapted for farm use for both the deep and shallow wells.

Fig. 1.—THE PUMP.

Fig. 2.—VALVES, ETC.

Ventilators for Fodder Stacks.

The perfect curing of fodder corn is difficult, even with the best appliances; as usually done, the curing is very imperfect. The fodder corn crop is one that merits not only the best preparation of the ground and the best culture, but it is worthy of special care in harvesting and curing. The French farmers are giving much attention to this crop, and by good culture, are raising most extraordinary and very profitable yields. Seventy tons per acre is not unfrequently grown by the best farmers. We do not average more than eight tons per acre, yet with us the corn crop may be grown under the most favorable circumstances. In a few instances, a yield of 30 tons per acre has been reached by one farmer, but this is the highest within our knowledge. One of the most prominent defects in ordinary American agriculture is, the neglect with which this easily grown and very valuable crop is treated; and one of the most promising improvements in our advancing system of culture is, the attention now being given to fodder corn. A drawback under which we labor is the difficulty of curing such heavy and succulent herbage; this, however, will by and by be removed, both by the adoption of the French system of ensilage, and by better methods of drying the fodder. On the whole, the system of ensilage offers by far the greatest advantages; the fodder being preserved in a fresh and succulent condition, and the labor of preparing the silos, cutting the stalks, and properly protecting them from the atmosphere, being actually no more than that of drying the crop in the usual manner, storing it in stacks, and cutting it afterwards for use when it is needed. It is impossible, however, that even the best improvements can be introduced otherwise than slowly and with caution; the old system, although it may be less effective and profitable than the new, will be long retained by many; and even in the old methods improvements are being made from season to season by the ingenuity of farmers. For instance, we recently saw a very simple but useful arrangement for the ventilation of stacks, and mows in barns, which is applicable to the curing of corn fodder. It consists of a frame (fig. 1),

Fig. 1.—FRAME.

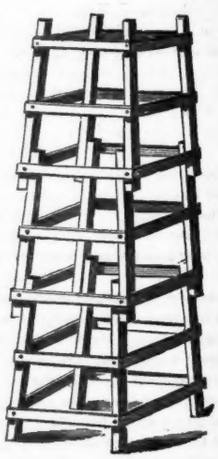


Fig. 2.—VENTILATOR.

made of strips of wood, put together with small carriage bolts. The strips may be made of chestnut, pine, or hemlock, the first being the most durable and best, 2 inches wide and 1 inch thick. The illustration shows how these strips are put together. The length of the section shown may be three or four feet. At figure 2 is seen the manner in which the sections are put together. A small stack may have a column of these ventilators in the center; a large one may have three or four of them; in a mow in the barn, there may be as many as are needful, two or three, or more, as the case may be. When made in this shape, they are so portable, and easy to use, that the greatest objections against ventilators are removed. In stacking fodder corn, it is safest to make the stacks small. Three of these sections, placed together in one column, are sufficient for a stack containing three tons, and which would be about 14 feet high. The sheaves should be small, and the stack somewhat open at the bottom, so as to freely admit currents of air. The top of the stack should be well protected, to keep out the rain; a hay cap fastened over the top, would be very effective for this. If a quantity of dry straw could be thrown in between the bundles, and on the top of each layer of them, the perfect curing of the fodder would be then secured.

A Western Locust Trap.

A great many devices have been used for the destruction of the locusts in those Western States where they have done so much mischief for a few years past. Whether the locusts are to remain as a permanent pest to the Western farmers, or not, remains to be proved. It is certain, however, that through some effects of the climate, the attacks of parasitic enemies, their consumption by birds and other animals, and by the efforts of the farmers themselves, the locusts have of late been greatly reduced in numbers, and their depredations have become almost inconsiderable. Many methods have been adopted for their destruction. Rolling the ground; plowing furrows, and making pits in them in which the insects are caught; burning them in long piles of dry grass; catching them in large sacks, and upon frames smeared with gas tar, and upon large sheet-iron pans containing burning fuel; all these have been tried with more or less success, as well as the negative means of diverting them from their course by means of thick smoke from smothered fires of

TRAP FOR CATCHING LOCUSTS.

prairie hay. But the most effective method is one that has been invented by a woman in Minnesota. This consists of a large strip of sheet-iron, from 10 to 30 feet long, turned up a few inches at the ends and one side; a wire is fixed to each end, or at proper places in the front, by which it can be drawn over the ground by a pair of horses or oxen. A light chain or rope is fixed so as to drag upon the ground a foot in advance of the front of the sheet-iron, by which the locusts are disturbed and made to jump, and as the machine is moving on at the same time, they drop upon it. A thick coat of gas-tar is smeared over the surface of the iron, in which the locusts are imbedded and stick fast. The vigorous kicking of the trapped insects, helps to keep the mass stirred up, and present a sticky surface. When the trap is full, the locusts are raked off into a pile, and set on fire and consumed. This machine can be drawn over young wheat without injury, as it is not heavy enough to break it down, and being flexible, conforms to the surface of the ground it is passing over. The engraving shows the manner of preparing the sheet-iron for this purpose. As the season when the locusts have formerly damaged the newly sprouted fall wheat is near at hand, it will be useful for many Western farmers to know of this cheap and effective method, which is not patented, and for which they may thank a

Fig. 1.—SHAVING-HORSE FOR SHINGLES.

farmer's wife of more than usual ingenuity and habits of observation.

Hints and Helps for Farmers.

A SHAVING HORSE.—C. W. Yost, Lenawee Co., Mich., sends a drawing of a shaving horse for shingles, and one for other uses. The shingle horse, shown at figure 1, is made of a plank 10 feet long, 6 inches wide, and 1¼ inch thick. A slot is cut through this plank, and a lever, made of a natural crook, is hinged into it. A wooden spring is fixed behind the lever, and is fastened to it by a cord. This pulls back the lever when the foot is removed from the step beneath. The horse may have four legs, but two will be sufficient, if the rear end is made to rest upon the ground. Figure 2 is made of a plank, 6 feet long, 10 inches wide, and 2 inches thick. Four legs, 2 feet long, are fixed in 1¼ inch holes, as shown in the engraving. A bench, 18 inches long, 8½ wide, and 1¼ thick, is

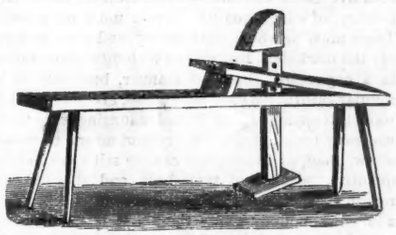


Fig. 2.—HORSE FOR GENERAL USE.

fixed upon the horse. A slot, 8x1¼ inches, is cut through the bench and the plank, and the lever, 2 feet 8 inches long, is fixed in this by means of a pin passing through the bench. Some extra holes are made in the lever, by which the hight of the head above the bench may be changed to suit different sizes of work. A head is put upon the lever, 6 inches square each way, but beveled off at the front. The foot board, 5x10 inches, is fastened to the bottom of the lever by a strong pin.

A MILKING STOOL.—H. S. Sperry, Iowa City, Iowa, sends a plan of his milking stool, (figure 3). The front of the stool is hollowed to receive the pail, which is kept in its place by a wire, fixed as shown in the engraving. The front leg has a projecting rest upon which the bottom of the pail is placed to keep it from the ground, and also from breaking away the wire by its weight. The milker may either sit astride of this stool, or sideways upon it. He also sends a plan of a method for raising or lowering

THE ROOF OF A HAY BARRACK by means of a lever shown at *D*, figure 4. *A* is the roof of the

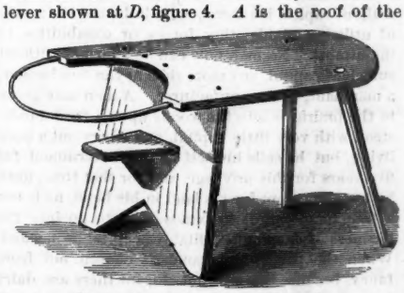


Fig. 3.—SPERRY'S MILKING STOOL.

barrack; *B*, the post. *C*, is a pole, about 8 feet long which rests in a notch in the lever *D*, and which is placed beneath the corner of the roof. The lever rests upon the iron pin *E*, and as it is pressed down, or allowed to rise up, the roof is raised or lowered. It is then secured in the usual manner by an iron pin. The pin *E* is a spare pin, and is carried from one corner to another, as the roof is raised or lowered, one corner at a time.

The Requirements of Fish Breeding.

We continue to receive numerous applications, principally from the South and West, for information about stocking ponds and streams with fish, either trout or black bass. Nothing is more common than for the owner of a horse-pond or hog-wallow, a hundred feet across, and perhaps dry in the summer, to imagine that he has good facilities for raising his own fish, and supplying his neighbors. Two things are always necessary to make fish breeding a financial success: suitable water to raise them, and good markets near home. If one desires to breed trout for market, spring water in large volume is indispensable. The hatching can be done well enough with very little spring water, if it is pure, but the difficulty is in carrying the fish through the summer. In ordinary ponds without springs in them, trout will die, and this is one cause of the extermination of trout in many of the streams in the older States. The forests that once protected the springs have been cleared away, and the water in the summer is too warm for the trout. A large stream of water is wanted, not only to keep the trout cool, but to furnish food. Trout feed mainly on animal food, and the cheapest source of supply is usually the wastes of the fish and meat markets in the cities and villages, the lights and livers of slaughtered animals, and the offal of fish. If fish have range enough, they will cater for themselves. If confined to narrow quarters, they must be fed constantly, or they will devour one another. Food supply then is an essential element in the question of profit in fish culture—good water avails nothing for trout unless you have cheap food for them. Black bass can be raised in much warmer water than trout, but they must have room, or, lacking that, abundant supply of cheap food. A few might live in a horse pond, but there could be no profitable breeding. In almost any mill pond, with a constant stream, and a rocky or gravelly bottom, black bass will flourish. Of course, the larger the pond the better. Then fish must be well sold, to pay. They should be raised within easy reach of a large market.

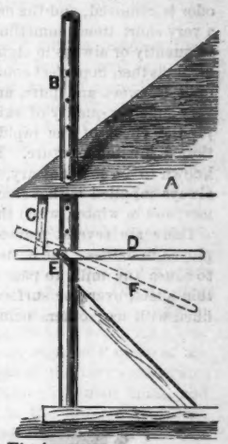


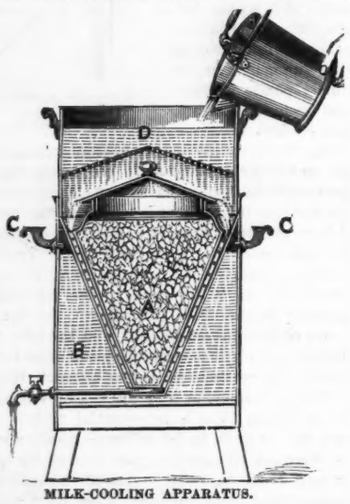
Fig. 4. CORNER OF BARRACK.

A Method of Cooling Milk.

The investigations of many prominent American and foreign dairymen, have shown that milk, as well as its products, are much improved in quality by its rapid cooling immediately after it has been drawn from the cow, and in consequence of this knowledge, many devices are in use for the abstraction of the natural heat of the milk. It is known that milk, as it comes from the cow, is impregnated with volatile matter, which has a peculiar odor, not disagreeable when it is weak, but when it is concentrated it is very strong and exceedingly unpleasant. This, which usually exists as a vapor or gas, by concentration, appears as a yellowish oil, which has very disagreeable properties. It gives an obnoxious odor to anything brought into contact with it, and when allowed to remain in the milk it not only communicates this odor to the cream and butter, but it has the effect of producing rapid decomposition in them as well as in curd and cheese.

The well-known trouble of "floating curds" in the cheese dairy, is believed to be the effect of this gas, which is present in more than its usual quantity, either from an abnormal condition of the cow, or from some improper management of the milk. By exposing the milk to a low temperature, this substance is removed, and it is believed that exposure in a thin stream to a current of air, has the same effect; although this may be due to the cooling as much as to the aerating of the milk by this process. For the convenient cooling of milk in the dairy, we have the Hardin process, and the Cooley system; the latter having been reported by some extensive makers of choice butter, as being very effective. Both of these methods are based on reducing the milk quickly to a low temperature, which is maintained for some time. The objectionable animal odor is removed, and the cream is all separated in a very short time, sometimes in three hours, but frequently or always in eight to twelve hours. The cream is then in perfect condition, and the skimmed milk is sweet and pure, and may be made into a very superior quality of skim cheese. This is simply the effect of the rapid cooling, and the continued low temperature. To cool rapidly, is now known to be so necessary, that the best dairies are always supplied with a stock of ice for use in summer, and in winter, when the weather requires it.

There are several methods of cooling milk employed in dairies; the basis of most of them being to cause the milk to pass in a small stream or a thin sheet, over the surface of a metal receptacle filled with ice; others being to place the pans or



MILK-COOLING APPARATUS.

cans containing the milk, in reservoirs of cold water. The former methods are the most convenient for common use, and the most readily available. A very effective milk cooler may be constructed in the following manner. A tin pail of conical shape, (*A*, in the engraving), is made to fit inside of a cylindrical pail having a conical lining. The space (*B*) between the sides of the round pail and the lining, is filled with ice water through a pipe having an enlarged mouth, (*C*). The inner pail is provided with a cover having a knob for a handle, and having a flaring edge, which overlaps the narrowed mouth of the pail. This manner of construction is necessary, as will be seen further on. A strainer, having the shape shown at *D*, is made to fit into the top of the outer pail. The inside part of the lining of this outer pail has a narrow spiral strip soldered to it in such a way as to make a channel around it, which performs ten or twelve revolutions before it reaches the pipe and tap, with which it is connected, at the bottom. When the inner pail is in its place, the side of this forms a part of this channel. The inner pail being filled with finely broken ice, with salt mixed with it, to reduce the temperature, if thought proper, is placed in the outer can, and the cover is put on. Then, the strainer being in its place, milk is poured into it, and dropping through the fine wire gauze, is freed from loose impurities, and flows on to the cover of the inner pail, from which it passes into the channel formed by the spiral shelf mentioned. As it passes through this channel in a small stream, the milk is exposed to the cold surfaces of both the inner and the outer pails, so thoroughly, as to cause it to issue from the pipe below at a very low temperature, and it may be passed through more than once, if necessary, to bring it down to 40 or 45 degrees, which is considered the most effective for the desired purpose of purification. The strainer is furnished with a handle upon each side, and the mouths of the pipes by which the outer pail is supplied with cold water, may be so made as to be used as handles for lifting the whole. The cooler should rest upon a stool about 2 feet high, so that a pail or pans may be placed under the tap to receive the cooled milk.

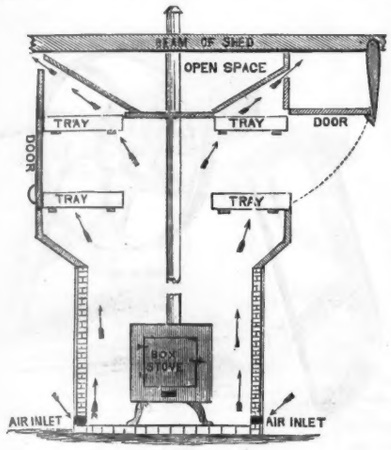
Feeding for Beef.

Feeding cattle must in the future be made an accessory of all grain or mixed farming. Dairying, grain and cattle raising, and special cultures, will undoubtedly form the three chief divisions of agriculture in the future. This is made necessary by the course of events, some of which are the gradual change of the soil from its new condition to one in which it must be fed systematically and scientifically; the increasing popular demand for meat, dairy products, and other choice domestic supplies, which are needed in a community whose manner of life is improving year by year, and also by the necessity of conducting our industries in a very economical manner, so as to meet the present active competition. All these events, with others, to which we need not refer, are combining to force farmers to feed live stock and make beef, mutton, pork, and poultry, of a high quality. Grain must be grown. There must be wheat, oats, barley, and corn, to supply the markets. But we can no longer grow these in a haphazard, slip-shod manner, but only in a regular skillful rotation with grass, green crops and roots interchanged, and liberal manuring is the first necessity for all these. We cannot afford to waste straw, chaff, or fodder, nor can we sell roots in any quantity, because of their bulk, and also for the reason that, except for feeding beeves, sheep, pigs, and cows, nobody wants them. It is needless to explain further to the farmer who has gone through some years' experience in growing grass and grains, how this necessity is rapidly forcing him to change his methods. There are some who have adopted the new order of things, and are satisfied with the results; there are others, however, who not seeing, or refusing to perceive, the pinch they are in, are going on in the old way, year by year growing poorer, more dissatisfied, and more given to complaining that "farming don't pay any longer." The trouble is not in their business, but in their poor management of it. We have frequently spoken of the need for better work, for higher culture, for enlarged yields, and for the most economical and skillful management. How to reach these, is the point, that they are necessary is nowhere disputed. We see plainly, that it is only by choosing the most desirable branch of farming, suited for particular soils, locations, and other controlling circumstances, and sticking to this; bringing to the chosen business all the study, skill, patience, and *capital*, that may be needed. We emphasize capital, because without this, all the rest are unavailing. A farmer without capital is a slave; with it, he has the means of utilizing all his other forces, or capabilities, to the utmost. No man now can be a farmer without sufficient capital, any more than he can be a banker, a merchant, or a manufacturer. A man may go on to the prairie or into the woods upon a fresh homestead with very little capital, and worry out a poor living, but he sells himself to the Government for five years for this privilege, and for that time, until he has the patent for his land in his hand, he is not a free man, but is in bonds; but to go into the business of farming profitably, capital is needed. When the particular branch is chosen, not from fancy, because this will not do, for there are dairy farms and grain farms, one of which will not suit the other business; and there are milk farms and market farms in the vicinity of cities, that can be carried on nowhere else, and upon which other sorts of farming will fail; but the kind of farming to be chosen must be that which can be most profitably carried on under the circumstances and in the locality. Grain growing and mixed farming, including the rearing or purchasing and feeding of live stock, must necessarily form the largest branch of agricultural industry. As we have said, the one cannot be conducted alone, but must be assisted by the other. It comes then to be a most important consideration, what kinds of animals are the most profitable to keep, and how are they to be fed with most profit. It is evident, from a view of what is going on in the live stock markets, that it cannot pay to feed an animal that requires four or five years to mature, nor one that will not be extra in quality and of heavy weight. No beef animal can now be reared or fed with profit, that will not reach a weight of 1,400 lbs. at least, at 30 months old. A grade Shorthorn, or Hereford steer, of 1,400 lbs. at 2½ years old, will sell for $70 to $80, if not more, and it is as certain as anything of the kind can be, that for many years to come the value of beef will not be less than now. The new foreign outlet for meat secures this. Such animals as these, fed skillfully in yards or pens, with a moderate allowance of purchased foods, that are always cheaply available, such as bran, mill stuffs, linseed or cotton-seed cake, with the roots and straw grown upon the farm, will produce an immense supply of the very best manure; and if turned off on the market at cost only, these animals will leave as profit sufficient manure to produce a grain and root crop. This ought to satisfy a good farmer; but there is more profit in this business than that, although many farmers may not be able to realize more. The subject merely touched upon here is broad, and we simply present it as one to be thoughtfully studied.

Drying Fruit—Fruit Dryers.

While drying is not in all respects the best method of preserving fruit, yet the ease with which it may be done, the little expense attending it, and the small bulk and portability of the product, are so much in its favor that it is not likely to be superseded to any great extent by other methods. There has been, of late years, a great improvement in the process of drying fruit, and a marked improvement in the quality of the product. In the primitive way of drying, the heat of the sun is depended upon, and not only is much fruit lost by long spells of cloudy and damp weather, but at the best the fruit is so long exposed that it assumes a dark color, and unless special care is taken, dust and insects tend to deteriorate the product. Still there is much fruit prepared, not only for family use but for market in this rude manner. By a proper arrangement fruit may be dried in the sun in a very unobjectionable manner; we described this some years ago, but will briefly repeat it, as in the absence of an apparatus for drying by fire heat, this is the next best. If one has hot-bed sashes, the trouble is very little; in the absence of these, ordinary window sashes will answer. A box is to be built of a size for the sashes, with a sloping top, and in all respects like a hot-bed frame, except it has a bottom, and should have legs to lift it several inches from the ground. The frame should be well made, all its joints, and the contact of the sashes with the top edges of the frame so tight that even very small insects can not enter. The sash should slope towards the sun. In the front or lower side of the frame, near the bottom, should be several holes for admitting air, and on the back side, near the top, others for outlets, and all covered with wire cloth. Fruit and vegetables placed in shallow wooden trays, or other receptacles, will dry much more rapidly than in the open air, and free from any contamination; besides, if the sash is in good order, no harm can come to it in case of a sudden shower. The need of some contrivance which will be quite independent of the weather, and which can keep at work in the night as well as the day, has led to the invention of a great number of dryers, most of which are patented. Some of these are small and portable, while others, for operating on a larger scale, require an outlay of several

thousands of dollars to establish them. The simplest method of drying by artificial heat, is to place the fruit or vegetables in the stove oven with the door left open; sometimes a rack is arranged over the kitchen stove to hold the articles; both these will answer for small quantities, and are useful auxiliaries in drying by the sun, but require frequent attention, to prevent the fruit from being cooked as well as dried. All the patented dryers are constructed upon the principle of passing a continuous current of heated air over the substances to be dried, and the means of effecting this present a great variety. During the late war we visited an immense establishment for drying vegetables for the army. In this rooms were arranged with racks for holding a series of shallow trays—merely a wooden frame with coarse cotton cloth tacked on for a bottom. Near the floor was a series of pipes through which steam circulated, to supply the heat, and openings were made to let in cold air below the pipes, and above were others to let



SECTION OF FRUIT DRYER.

out the air after it had passed over the trays. The dryers offered for sale have a stove for wood or coal, to heat the air, trays to hold the fruit or other matters, and ventilators above. These being the requirements, it will not require a great amount of inventive skill for any one who wishes to dry fruit or vegetables, to construct something which will answer the purpose. Many years ago, having suddenly to preserve a large amount of sweet-corn by drying, where there was no dryer obtainable, we converted a room into a dryer. An ordinary cylinder stove was set near the door, and the pipe run across the room, about two feet above the floor, to the chimney. Trays were made by tacking some discarded tin roofing to strips, and some horses knocked together to hold them directly over the pipe. The door being taken off and replaced by a temporary shorter one, allowed cold air to enter near the floor, and a window at the opposite end of the room was let down at the top, to furnish an outlet. The arrangement, even during a long storm, worked in a most satisfactory manner. An illustration more to the point, is furnished by Mr. F. Malcolm, Ont., Canada, who at a very little expense, extemporized a fruit dryer in his wood-shed, which has worked so satisfactorily for two years, and is so simple and cheap that he wishes others to have the benefit of it, and sends a sketch, giving a cross section, or as it would appear with the front removed. Mr. M. does not give any dimensions, except for the trays, but that is a matter that will vary with circumstances; we say that all he wishes to show is the principle upon which it is built. The enclosure is made of tongued and grooved boards, and protected from fire by lining exposed parts with brick and tin. A box stove is used for the heater, the pipe from which rises horizontally back to the rear of the dryer, turns upon itself, and then upward to the outside of the dryer and of the shed. This doubling the pipe gives increased heating surface, and saves fuel. Eight trays are used; these are 2 ft 4 in. wide and 3 feet long; these go in pairs, end to end, consequently the dryer is 6 feet long on the inside. These trays slide upon cleats attached to the ends of the dryer, which are not shown in the diagram, nor is a central support which is provided for holding the ends of each pair. Though Mr. M. does not say so, we infer by the arrows showing the direction of the air current, that the bottoms of the trays are of slats; at all events, that would be found a great advantage. There is at each side a door running the whole length, to allow the trays to be put in and taken out; this door turns up, and is held in place by a hook, as shown at the right hand side of the diagram. An opening at each side next the floor admits the cold air, and outlets are provided above the doors for the exit of the air. The lower openings should be provided with covers, or shutters, by which the flow of air may be regulated. In the front of the dryer is a door through which the fire is fed and managed. As to the capacity of such a dryer, Mr. M. says: "There are eight trays, and it requires about 7 bushels of apples to fill them; in 24 hours the apples may all be put into two trays, leaving the other six to be filled; by working in this way, a family may peel and core about 5 bushels every evening. With a moderate fire the apples will be dry in 48 hours." In this and other dryers, a high temperature is not of so much importance as a free circulation of air, hence the ventilator, or exit, should be sufficiently large. As soon as air is heated, its capacity for moisture is increased, this passing over the fruit quickly takes up moisture from it, and passes on to the outlet to allow a fresh and, so to speak, thirsty portion of air to come and take up its share of moisture. Besides more certain drying, without chance to spoil, a dryer turns out a much handsomer product than can be made in the open air, as light is excluded, and the fruit remains much lighter colored. Knowing the principle involved in the construction, and by the aid of such hints as are given by Mr. Malcolm, no one should find any difficulty in constructing a fruit dryer. It is not necessary to built it in a shed, as one may be put up by itself with a roof over it, which should project all around sufficiently to allow of operating in wet weather. Indeed it is much safer to have it quite detached from the dwelling, as woodwork, exposed as this would be, to a high temperature for many days or weeks, becomes so thoroughly dry, that it will be very inflamable; care is required in this respect, whatever wooden dryer may be used. If small articles, like berries or green corn are to be dried, the bottoms of the trays may be of some loose fabric, or preferably of wire cloth, made of wire thoroughly tinned.

A Frost-proof Stable.

It is entirely practicable, even in our northern climate, to make stables frost-proof, while they are occupied with cattle. We all know that this can be done, by packing the sides with sawdust, tan-bark, sea-weed, straw, or other good non-conductors. But we visited a barn last winter in which it was done, by simple faithfulness in building. The stable was immediately over the basement, and had for one of its sides the bank-wall. This was pointed with cement. The other sides were made of tongued and grooved inch pine boards, and battened, the lumber well seasoned, and painted. The windows and doors were close fitting, and there was no crevice left where the wind could creep through. The trap-doors, through which the manure was passed below, were perfectly tight. We were surprised at the agreeable temperature as we entered the barn on a bitter cold day. It seemed as if a stove or furnace must have been used in the building. But the proprietor said that the animals were the only stoves in use, and the manure had hardly been frozen even in the zero nights. He spoke with great satisfaction of the economy of such a stable. It saves greatly in fodder. All the hay and grain that are used to keep up animal heat in the open air in winter, goes, in such a stable, to the production of flesh, fat, and milk. The saving is about one-third the value of the fodder consumed. The flow of milk is kept up, and butter is made all through the season, when, on most farms, the cows are entirely dry. Animals fatten readily under such conditions, and can be sent to market when prices are at the highest notch. The manure goes, with the animal warmth in it, to the compost heap to help the fermentation of the mass beneath. The water is never frozen. It costs but a little more while we are building, to have the job thoroughly done. The investment is a security stock, and will never fail to pay dividends. Holes and cracks in the siding and floor are holes in the purse. Those who are building, or are about to build, will do well to consider these things. CONNECTICUT.

How to Treat Animals with Broken Legs.

BY DR. W. C. COLEMAN, LATROBE, PA.

It is considered a very serious accident for a horse or mule to get its leg broken, and as a rule, when such an accident occurs, the animal's life is sacrificed, unless it be occasionally, when much value is at stake. Various modes of treatment have been suggested from time to time, the greater part of which have been attended with much trouble, and generally considerable expense, hence have not been brought into general use. It may be possible that the mode of treatment I am about to suggest, has been tried by others, but if so, I am not aware of its being extensively used, therefore I venture to offer the following on the subject. Of late years the "Plaster of Paris Dressing" as it is called, has been revived, after having been discarded for a long time, and with the present improved mode of applying it, is considered one of the very best modes of treatment for fractures of human limbs, and especially when applied to the lower extremities. Its advantages have been fully tested, both in hospital and private practice, and the results have been the most satisfactory, where the ordinary precautions were observed. I have had some experience with this dressing, and have invariably had the most gratifying results; a full report of two cases may be found in Penn. State Medical Association Transactions, 1875, and the Reports of Bellevue Hospital, N. Y., abound with cases which have been treated there within the past three years.

I am not a veterinary surgeon, neither by education nor practice, but I have long seen the need of some efficient and practical way of treating the fractures of animals, especially those of horses, and having expressed my views on the "plaster dressing" as being applicable to both man and beast, a personal friend took occasion to test my sincerity, by calling on me to dress a fracture of a young and valuable mule, which had fractured the right leg, between the hoof and pastern joint. I applied the plaster by the usual method for fractures, by preparing my rollers in the following manner. I took six rollers, each two inches wide and six yards long, and while I unrolled them I dusted both sides with dry Plaster of Paris. I re-rolled my bandages quite loosely. This being done, and armed with a basin of luke-warm salt water, we proceeded to reduce the fracture by binding the leg at the knee-joint, and having two strong men make extension and counter-extension by pulling steadily in a direct line, and on finding the injured parts well in apposition, I applied a piece of U. S. blanket from the knee to the hoof, and with my roller well moistened in the salt water, began applying it in the ordinary way from below upward, at the same time keeping a close watch on my extension and counter-extension. After the leg from the knee, and including the upper half of the hoof, had been thoroughly encased in this box of cloth and plaster, I directed the extension to be kept up until the plaster should be firmly set, and keep the leg flexed for the first twenty-four hours. This having been done, the mule received no further attention, than to be kept confined to his stall, and the usual supply of plain food and drink was given regularly, such as hay, oats, and corn, just in their whole form, and no medicine of any kind being used either externally or internally. At end of seven weeks the plaster dressing was removed, and the union of the parts was complete, with no deformity, except a slight enlargement at the point of union,

which will probably all be absorbed and disappear. The mule did not incline to injure the dressing with his teeth, although permitted to lie or stand, as he desired, I had, however, directed a mixture of common tar and pulverized aloes, equal parts, to be applied to the plaster dressing, should there be any tendency to use the teeth. The success attending this very simple and easy mode of treating fractures in this one case of an animal, usually more vicious than the horse, has led me to believe that "Plaster of Paris," properly applied, must be as successful in the treatment of fractures in animals, as it has been in those of man. It is certainly worth the attention of the public, and more especially that of all educated veterinary surgeons.

[The above method of treatment as applied to veterinary practice, is not new; we gave an account of it in May, 1873—so long ago, that it is well to call attention to the matter anew, as it is a treatment that is successfully practised. Bandages of thick, brown paper wetted in glue water, have also been used successfully, and it is now no longer the practice to kill an animal which happens to fracture a

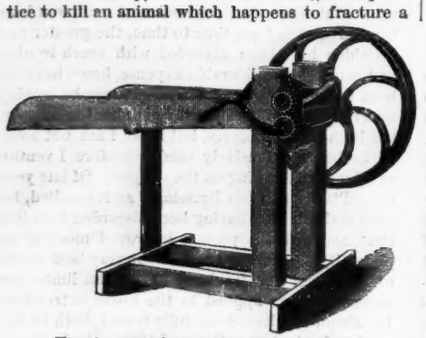


Fig. 1.—GALE'S COPPER-STRIP CUTTER.

limb that can be bandaged. The use of slings prevents any displacement, even with restless, nervous animals. The application of surgery to disabled animals, is often of great value, and is frequently found effective. Even amputation has been successfully performed; a valuable Short-horn cow was recently saved in this manner, and when furnished with a wooden leg, moved about the pasture as easily as before. It should be borne in mind that the plaster to be used is not the ordinary land-plaster, but calcined plaster, known as Plaster of Paris, and used for hard-finishing walls, etc. ED].

Some Useful Fodder and Root Cutters.

The saving made by feeding cut, instead of long fodder, is estimated by many careful and exact farmers at one half. From our own experience during many years, we are satisfied that, when long hay and unground grain are fed to horses or oxen, or whole corn-stalks and dry meal are fed to cows, or calves, double the quantity will easily be consumed and wasted together, that need be given, to keep the stock in an equally good condition, if the fodder is cut, and the grain ground. This is a very important saving, with which the extra labor in-

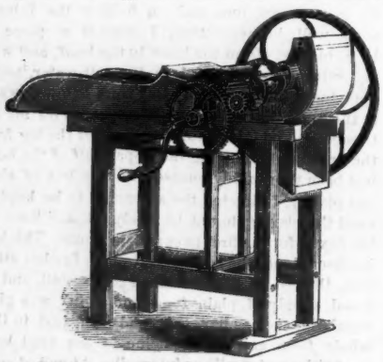


Fig. 2.—BALDWIN'S AMERICAN CUTTER.

volved in cutting and preparing the fodder, is inconsiderable. This fact is now so well known, that there are few farmers, stock breeders, or other persons, feeding many animals, who do not use

Fig. 3.—SILVER & DEMING CO.'S CUTTER.

fodder cutters. To meet the constantly increasing demand for these machines, a very large variety is manufactured, and improvements are constantly being made in their construction, so as to secure greater durability and efficiency. We here illustrate some of the most approved forms of these machines. Not having space to mention more than a few of those that are worthy of notice, we do not wish it to be understood, that these are all that are useful or desirable; on the contrary, there are many that are equally good and useful, made by other manufacturers in different parts of the country, that we have not room to mention at this time. Figure 1 represents the "Gale Copper-strip Cutter," made by the Belcher and Taylor Agricultural Tool Company, of Chicopee Falls, Mass. This is an old, standard machine, which we used some years ago with entire satisfaction. The spiral knives of this machine cut against copper strips upon the upper cylinder, which protect the blades, so that they will work for years without grinding. The smallest size will cut one bushel of hay, or fodder, into chaff an inch in length, in a minute. It will cut corn-stalks, with the ears upon them, or

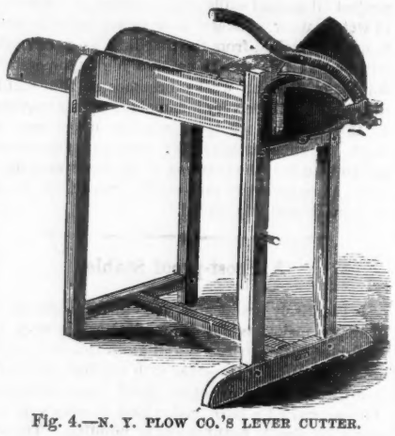


Fig. 4.—N. Y. PLOW CO.'S LEVER CUTTER.

hay or straw. Another machine which we have used satisfactorily, is the "Baldwin American Fodder Cutter," (fig. 2,) made by C. Pierpont & Co., New Haven, Ct. The knives of this machine are spiral, and cut in opposition to an iron plate, in the manner of a pair of shears. It is self-feeding, with iron rolls, which are operated by adjustable gearing. The smallest size is able to cut 110 pounds of fodder of any kind in an hour, in lengths from half an inch to two inches; the largest size of hand-machine will cut 700 pounds per hour. The largest size, operated by power, is able to cut two tons of fodder in an hour. A machine made in Ohio is shown at figure 3. This is the "Silver & Deming Company's Feed Cutter," made at Salem, Ohio. It was awarded several first premiums at fairs in Ohio, Pennsylvania, Indiana, and other States. Its special recommendation is a provision, by which, in case any stone, piece of iron, or other hard substance should accidentally come between the knives, they stop, although the fly-wheel still revolves. This is done by means of a friction cone upon the fly-wheel shaft, but this is only provided when it is specially ordered as the "safety fly-wheel." A lever cutter, made by the N. Y. Plow Company, New York, is shown at figure 4. This is one of the old, standard machines, which is approved by some farmers for its simplicity, and the impossibility of getting out of order. It has also the merit of being very low priced.

When roots are fed, a cutting machine for these is as useful as a cutter for fodder, and it is also necessary to the safety of the animals, in preventing choking that might occur by swallowing large pieces. An excellent root cutter, made by the New York Plow Company, is shown at figure 5. This machine was awarded a medal at the last exhibition of the American Institute. It is made to cut the roots into thin slices, a shape in which they may be safely and economically given to cows, sheep, hogs, or horses. A similar machine, which cuts the roots in shreds, is also made by the same parties. The engraving shows the manner of construc-

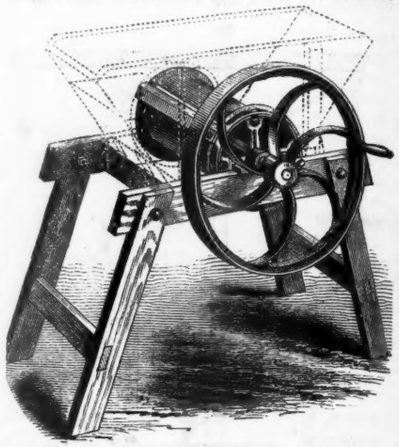


Fig. 5.—N. Y. PLOW CO.'S ROOT CUTTER.

tion, and the shape of the knives, and the box. The box is shown by the dotted lines, so that the knives, and cylinder upon which they are fixed, can be seen. A machine of somewhat similar construction, made by the Belcher & Taylor Company, of Chicopee Falls, Mass., is shown at figure 6. This machine cuts a bushel of roots in a minute. When thousands of bushels are fed in a season, the saving in time and labor is very great, and when but one cow is kept, and half a bushel of roots only are fed every day, it will pay to use one of these machines for the mere saving of time and labor. Now that every hour of a farmer's time is needed, to keep his farm up to a profitable condition of working, every time-saving and labor-saving machine is an absolute necessity to him. It no longer pays to do things by slow hand-work, nor to waste any of our resources, because the measure of the profit on the farm is now the cheapness with which the products are raised, and the farmer who can produce his crops more cheaply, than another can his, can undersell the latter, and still make a profit, while the latter loses money, or in other words, receives smaller pay for his labor. The one who

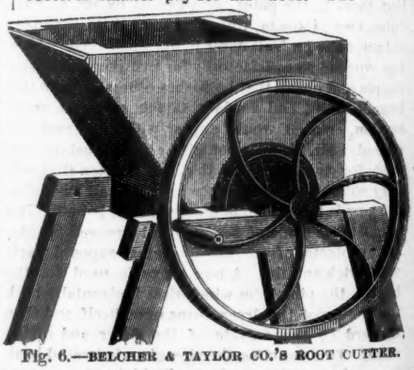


Fig. 6.—BELCHER & TAYLOR CO.'S ROOT CUTTER.

works the most rapidly and effectively, now gets the best pay, even if he is working for himself.

The Tufted Marshallia.

We like to see the names of American Botanists commemorated by American plants, but we have always thought it a pity that good old Humphry Marshall should have had his name attached to a genus of low herbs. The author of "The American Grove" (*Arbustum Americanum*)—a description of our native forest trees and shrubs, published in 1785, and regarded as the first botanical work by a native of the country—should have had a genus of trees dedicated to him, rather than the humble composite which is now known as *Marshallia*. Those not very familiar with such matters would hardly suppose, either from the plant itself, or from the drawing here given, the Marshallia to belong to the Composite family, as the best known among those, have the heads of flowers surrounded by a circle of conspicuous ray-flowers, as is strikingly seen in the Sunflower. Indeed, the heads of flowers strongly resemble those of a Scabious, or a Thrift, though a close examination will show the structure peculiar to the composites. Four species of Marshallia are given in the Flora of North America, all being southerners, and but one reaching as far north as Virginia. The one here figured, the Tufted Marshallia, *M. cæspitosa*, belongs rather to South-west, it being found on the moist prairies from Arkansas and further West to Texas. The narrow leaves, of the shape shown in the engraving, are crowded to form a leafy tuft at the base, from which arise the flowering stems, a foot or more high, which are leafy below and nearly naked above, and each bearing a somewhat hemispherical head of flowers, like that in the engraving, which is of the natural size. The small florets composing the head are all tubular; these in the other species are pale blueish or purplish, but in this of a light flesh-color. Though a native much further south, this species is hardy near New York, blooming in June; while it can not be regarded as a very showy border plant, it is an exceedingly neat one, and its modest flower-heads, being on long stems, work up readily into summer bouquets. If it were not half so attractive as it is, we should take pleasure in cultivating the plant, because it bears the name of one of the botanical worthies of the past century.

THE TUFTED MARSHALLIA.—(*Marshallia cæspitosa.*)

THE MANTCHOORIAN CORK-TREE.—(*Phellodendron Amurense.*)

The Mantchoorian Cork-Tree.

BY PROF. C. S. SARGENT, DIRECTOR OF THE ARNOLD ARBORETUM OF HARVARD UNIVERSITY.

This tree, a native of the country watered by the Amoor River, where it was discovered some twenty years ago, by the Russian Maximowicz, is known to botanists as *Phellodendron Amurense*, the generic name (from the Greek *phellos*, cork, and *dendron*, tree,) having been bestowed upon it on account of its rough, corky bark. The largest specimens M. Maximowicz noticed were some 40 feet high, with straight stems, and round, dense heads of handsome foliage. It bears opposite, unequally pinnate leaves, 15 to 20 inches long—the leaflets, of which there are 11 to 13, are lanceolate, and sharply serrate. *Phellodendron* is dicœcious, that is, the male and female flowers are borne on separate plants. The flowers, which are small, and inconspicuous, appear at the extremities of the branches, in rather loose spreading clusters, and these, on the female plant, are succeeded by black, pea-shaped fruit, thickly covered with glands containing a bitter-aromatic oil, common to the great natural order *Rutaceæ*, or Rue-family, to which *Phellodendron* belongs. This tree is known in cultivation in this country by a male and female plant in our Arboretum, raised from seed sent to Cambridge from St. Petersburg, soon after Maximowicz's discovery. These specimens, although in a very exposed situation, are perfectly hardy, and are already some 16 feet high, having flowered, and borne fruit last year for the first time. The fact that the trees which have flowered in Europe up to the present time, are all males, adds to the interest and value of our female plant, which will be called on to supply seed to the lovers of rare trees, both at home and abroad. A large number of plants have already been raised from last year's seed, and the still larger crop of the present season, will be carefully collected, and as widely distributed as possible to all who desire to cultivate this beautiful tree.

When we remember the long list of our native trees rarely met with in cultivation, in spite of their beauty and varied usefulness, it seems a thankless task to recommend for general introduction a new comer, whatever merit it may possess. American planters move in very narrow ruts, and confine their selections to a small number of plants, many of which are but little suited to fulfill the objects for which they are employed. The Mantchoorian Cork-Tree, as we are forced to call it, for want of a better English name, has, however, a special claim to popularity. It belongs to a class of small trees and shrubs, which, like some of the Sumachs, and the Chinese Ailanthus, present a tropical or rather sub-tropical appearance, and are therefore valuable to contrast with our more common forms of arboreal growth. Its freedom from the defects which render the Ailanthus unfit for ornamental planting, its superior size to any of the Sumachs, as well as its rapid growth, and great rarity, make this tree worthy of a place in even the smallest plantation. The accompanying figure represents a branch of the female plant, much reduced in size, and the male and female flowers about twice the natural size.

Helps in the Fruit Harvest.

The old practice of clubbing the trees, to make them give up—or rather down—their fruit is well nigh a thing of the past. When it is shown that the careful handling of fruit actually pays in dollars, people learn, though slowly, to adopt better methods. Picking by hand has generally taken the place of shaking and beating the trees. In picking,

LADDERS are needed, and for all trees of moderate size, some form of the step-ladder is preferable to any other. In an article last month on the "Peach Harvest," we illustrated ladders of this kind, and gave an easy method of making a rough one. In former volumes, there have been given various kinds of ladders, and methods of rendering an ordinary ladder self-supporting. See Jan., 1869, and earlier. Mr. Adam Bruker, Dauphin Co., Pa., sends a sketch of a home-made ladder, which he finds useful in the orchard, which is given in figure 1. A ladder similar to this, in having but one upright, has long been in use in Europe, but his is much simpler, and may be made by almost any one. A pole of the desired length is split at its lower end, and furnished with rungs, reaching between the two parts below, and passing through the unsplit portion above. The pole may be of any green wood that will split readily, but the rungs should be of tough, well seasoned wood, and an inch and a half through. We would suggest that an iron ring be placed upon the pole, or a bolt be put through, at the point where the split terminates. A ladder of this kind is much more easily placed in the branches of a tree than one of the common form, and being so wide at the base, will stand more firmly, especially on uneven ground.

Fig. 1.—ORCHARD LADDER.

AN ORCHARD HOOK will sometimes be found convenient. This, as shown in figure 2, is a wooden rod, with an iron hook at one end. A piece of wood a few inches in length, slides upon the rod, and has a strong peg near the end. By placing the hook over a branch, it may be drawn near to the picker, who catches the sliding piece under a lower branch, pushing the piece along the rod as may be

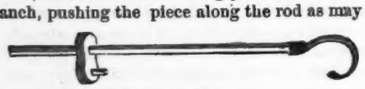


Fig. 2.—ORCHARD HOOK.

necessary; the pressure coming upon the peg, the sliding piece is held by the side-wise strain and can not slip. By the use of this, the picker can often avoid moving his ladder in order to reach the fruit, and it leaves both his hands free.

FRUIT PICKERS have been invented in great numbers, and the amount of ingenuity expended upon them is all out of proportion to their real usefulness. Some are made to cut and others to pull off the fruit; some catch the fruit in a little bag at the upper end of the affair, and others let it run down through a long sleeve into the hand or basket, and so on in great variety. Still, where fruit is upon a slender branch—and the finest specimens are often provokingly out of reach—some help of this kind comes in play, but in picking for market, they make too slow work. We have seen a very effective picker extemporized in a few minutes. An old fruit-can had a long V-shaped notch cut in the side; by means of a large-headed nail put through the bottom, the can was made fast to the end of a pole; a handful of grass put into the can, made the picker complete. The stem of the fruit being caught in the notch, it readily parted from the tree, and the grass prevented all bruising. Mr. S. A. Duke, of Drew Co., Ark., sends a drawing of an implement, which he calls a "Jack-knife Picker," because a man or boy can readily make one with his pocket knife. This is not patented, but will no doubt answer quite as well as those that are. The engraving, figure 3, will show how it is constructed. A light lath, or other strip, ¼x1¼ inch, and about 10 feet long, is fitted with a projecting piece at the end; a lever, also curved at one end, passes through the long strip near the top, and is provided with a spring of hoop-skirt wire to keep it open. The lever is operated by a stout cord, such as a fishing line, which is attached to one end, passes through the pole, down through another hole, and attached to one end of a lever which is at the lower part of the lath. By depressing this lower lever, the cord moves the upper one, and it is made to grasp a pear or other fruit, pick it and hold it until it is placed in a basket, which for convenience should be placed from the operator as far off as the length of the picker. We would suggest that much friction on the cord would be avoided by running it through a couple of screw-eyes, screwed into the lath.

Fig. 3.

BASKETS used in picking, should be of medium size, as the larger the basket, the greater the risk of bruising its contents. Some orchardists have them small enough to be turned inside of a barrel, so that when filled, they may be emptied into the barrel in such a manner as to allow the fruit to roll out gently, rather than to fall from the top of the barrel. It is convenient to have the handles furnished with hooks, by which they can be hung to a branch; these should have a ring at one end large enough to allow it to slip along on the handle, and so closed that it will not drop off the hook and be lost. It is sometimes convenient to hang the basket to a strap, which passes over one shoulder.

Notes from the Pines.

Last year was noted for its long and severe drouths, and this season has, thus far, (early August), been as strikingly in the other direction. Not only have rains been frequent and abundant, but we have had periods of several days at a time, when the air was surcharged with moisture. As a consequence vegetation presents a great contrast to its appearance last year, and shows the most vigorous growth. But there are some exceptions to the general condition. These moist, hot days, are especially favorable to the growth of those fungi which prey upon other plants, and as a consequence we have an unusual manifestation of

Grape Mildew.

This has had so many days especially suited to its rapid spread and development, that I fear that all our sulphuring will not avail, and the splendid promise of a crop of grapes will show a meagre fulfillment, for with this dampness comes not only mildew, but rot.... The first year that our clump of

Thready Yucca, Bear's Grass, Adam's Needle,

or by whatever name you choose to call *Yucca flamentosa*, bore fruit, the seeds were saved and a lot of them were sown. In a couple of years we found that we had on hand enough yuccas for a plantation, and after edging a cross path in the garden, the rest went to the heap. Here and there a plant showed flowers last year, but the present season, the fourth from the seed, there was a general inflorescence. A row of 200 feet in length, closely set with this yucca in full blow, is a sight worth going far to see. It is interesting to note what a variety of plants were produced from the same lot of seed. Some plants are nearly twice as large as others, while there is a marked difference in the width and stiffness of the leaves, amount of threadiness of the margins, and in the shade of the green. Indeed, in looking at the extremes here presented, one can hardly wonder that several species have been made from the varieties. The differences in the flowers are not so striking as those in the foliage; in some plants the flower stalk is reddish throughout; the panicle or cluster is more or less branching in different individuals, and there is considerable variation in the size as well as the shape of the flowers, some being nearly globular; so far as color goes, there is considerable difference in the purity of the whiteness, a few being of a clear "paper white," while the majority are more or less tinged with green, and now and then one with just the tips of the divisions of the flower slightly touched with dull purple. If one could only induce a plant to put some red into its flowers as well as in its stalks, it would be a great gain. We have had

The Narrow-Leaved Yucca,

Yucca angustifolia, in flower for the first time, though the plants must be six or eight years old. This species, which comes from west of the "Father of Waters," has leaves only half an inch wide, or less, very stiff and sharp, of a dull, pale green, and its flower cluster being seldom branched, makes much less show than the other. This is also a variable species, some forms having very large flowers, but those on our two plants were not noticeably unlike those of the common species. The seed vessel is about twice as large as that on the Thready Yucca....In Sept., 1875, you figured

The Ramanas Rose of Japan,

from specimens sent from here. I hold to the good opinion of the plant there expressed; its very dark green and robust foliage, appears to be shunned by the ordinary rose insects; its flowers, which appear earlier than those of any other rose, make up by their abundance and prolonged bloom—it having now, the first week in August, several flowers—and especially by their fragrance, the lack of that doubleness that most persons consider so essential in a rose. I know that I am laughed at for admiring a single rose, but I have an advantage over those persons, as I can enjoy the double ones as well as they, and have besides the pleasure of the others, in which they can see no beauty. But, after all, the great value of this rose as an ornamental plant, is in its fruit, and this is why I refer to it now. When I sent the specimens for an engraving, the fruit had not formed, and I sent the artist a French plate as a guide for the fruit, which was there represented as globular, and it is so given in the engraving and description in 1875. It appears that there is a considerable variety in the shape of the fruit; it is sometimes globose, but in both my white and red-flowered plants the fruit is remarkably flattened; the larger specimens are an inch and a half broad, and only half as long, (or short), and are crowned by the divisions of the calyx, which are

an inch and a half in length; the engraving, giving a section of the fruit, shows these. In Siebold's engraving, the young fruit is shown as very prickly, but this also varies, and in mine the surface is bright, entirely smooth, and shiny, and at first orange-color, which turns to scarlet. This rose is found wild in parts of Japan, and is generally cultivated there and in Northern China. "Ramanas," given by Thunberg as its Japanese name, is, according to Siebold, incorrect; he says it should be *Hama nasi*, which means "beach pear," but as

Ramanas has been accepted in various works and catalogues, at home and abroad, as the common name, it is not worth while to attempt to change it, especially as it has the advantage of being one word instead of two. It may commend this rose to those who are fond of the antique, to know that as early as the year 1100, the court ladies made a perfume of its leaves, though I am sorry to add that they had the bad taste to add camphor and, worse yet, musk!....Among the noticeable plants now in bloom, is what is known in the West as

The Kansas Gay Feather,

though it is not especially Kansan, nor is it feathery, but as the name is more likely to be popular than *Liatris pychnostachya*, I will not find fault with it. Our clump is well established, and I doubt if Kansas or elsewhere can show it in finer condition; the flower-stalks stand nearly, if not quite, 5 ft. high, and for half their length are a dense cylindrical spike of the liveliest rose purple; the effect in the mass is superb.....I am every year more impressed with the mistake we—that includes all Americans—make, in neglecting our native lilies, but more especially our

Superb or Turk's-Cap Lily,

(*Lilium superbum*) which is found in rich meadows from Canada to Georgia, and which almost any one can, with a little trouble, find in flower, and mark so that the bulbs may be taken up in the fall, and removed to the garden. It will do fairly in ordinary garden soil, but if one would see what it is capable of, give it a light soil with plenty of muck or peat, and then—let it alone. Year by year the bulbs will gain in strength, and throw up more vigorous stems, and when one has an established clump, he will admit that Linnæus hit it exactly, when he wrote its name *superbum*. In favorable situations it may be met with in the wild state, growing 6 feet high, with 20 or more flowers, but in cultivation it has reached 8 and 9 feet, with 40 or more. The divisions of the flower are handsomely recurved; they are orange-colored at the base, and thickly spotted with violet purple, while the upper and larger portion is of a peculiar red, which has been by some termed "mahogany color," the general effect being exceedingly rich. Here is a plant within the reach of almost all, who travel about the country with open eyes, and will take a little trouble to secure it—and if those who would gladly have fine things, if they could only afford them, will get a good clump of this lily, they will have little reason to regret that their means will not allow them to indulge in costly exotics.

How Plums are Made into Prunes.

Oregon and California being fortunately as yet free from that destructive pest to all stone fruits, the curculio, the plum flourishes there, and produces most generous crops. We have had several inquiries from these States, asking how plums are converted into prunes. As this is outside of the line of our experience, the best we can do is to give the methods described by French authors, and followed in the country from whence we derive nearly all of this kind of fruit. It is generally supposed that any plums may be dried into prunes; this is a mistake; in France the varieties fit for the purpose form a distinct group, and in districts celebrated for the quality of their prunes, such as Tours, Angern, Provence, etc., they cultivate some special variety. The leading varieties are the Brignolles, D'Angen, Quetsche, and Perdrigon Violet, which are but little known in this country; the St. Catharine and Pond's Seedling, well known European varieties, and the Washington, of course American, are sometimes cultivated, but to a limited extent, in some localities. The plums are allowed to get so ripe that they fall from the trees, and to prevent injury by the fall, the ground beneath the trees is either made soft by working with the plow and harrow, or is covered with straw. The fruit, which is picked up every day, or every other day, is washed if soiled, and then spread upon wicker trays made for the purpose; these are either circular, or egg-shaped, or rather the shape of a battle-door, the narrow end coming to a point to serve as a handle; they are about 20 inches across. The drying is done by exposure to both the sun and to fire heat, ordinary baker's ovens being used, or ovens are especially built for the purpose. The object is, to dry the fruit as rapidly as possible, without breaking the skin. The fruit, in a single layer in the trays, is exposed for several days to the sun, where it is carefully turned from time to time, in order that all parts may be equally exposed. Neither of several French writers mention just how long this continues, but as all agree in saying it is for the purpose of toughening the skin, we infer that it differs with circumstances, and that the proper condition is only learned by practice. The trays of fruit are placed in an oven heated from 165° to 175°, (Fah.), and the mouth of the oven securely closed. At the end of 24 hours the fruit is taken out, and when completely cold, it is turned upon the tray. In the mean time the oven is re-heated, this time from 212° to 230°, and the fruit placed in again, where it remains as before; after another cooling and turning, the oven being heated to 255°, a third drying is given, and this generally completes the process, though it is sometimes necessary to return the fruit to the oven once more. The prunes are known to be properly done if they have a certain degree of elasticity when pressed by the fingers. They should have perfect skins, which shine as if varnished, and be free from all scorching. In France it is customary for the growers and dryers of the fruit to sell it to the packers in Bordeaux and other markets, where three grades are recognized, founded on the number of prunes required to weigh 500 grammes, or a trifle over a pound and a quarter. If 70, or less, weigh this, they are "fine," if it requires 80, they are "medium," and "small" if 90 or more are required. In packing, the fruit is assorted in the same manner, the "superfine" being selected prunes, 30 to 35 of which weigh 500 grammes, and down through several grades. In particular localities the process of drying is varied; in Provence, the fruit is scalded before drying. In some of the finer kinds the prune, before entering the oven for the last time, is rounded, by turning the stone within, and flattening down the ends, without breaking the skin. The Brignolles prunes have the fruit peeled, strung upon sticks, and dried in the sun; when nearly dry the stone is removed, and the drying finished. For the common prunes, such as are imported in casks, the fruit is shaken from the trees, and does not receive such special care in drying. It is important that those on the Pacific coast and elsewhere, who wish to undertake the manufacture of prunes, should experiment with varieties known to be suited to the purpose. We have no doubt that, at least for a common article, some of our different fruit dryers will answer their purpose as well as the ovens used in France.

THE HOUSEHOLD.

☞ *For other Household Items see "Basket" pages.*

Home Topics.

BY FAITH ROCHESTER.

Telling Stories to Children.

Most persons who read "Helen's Babies," felt some sympathy for "Uncle Harry," whose insatiate nephews made such frequent demands for stories. A "Budge," or a "Toddie," by any other name, is quite as unreasonable and unseasonable in its requests. "Uncle Harry" resolved never to teach any children of his own such a means of imposing upon the good nature, and destroying the leisure of grown up people. I came to that decision myself when I had the care of a dear little niece for a few months many years ago. At least I resolved never to begin *making up* stories for another child. If you once let a child know that you can manufacture stories to order, where can you find a stopping place? If your child has a nurse, and you are not with it much of the time, you ought to be able to make up or repeat stories for it frequently. But if you have the little one's constant presence, you must at least confine the story telling to particular times and seasons—bed-time or twilight stories. Some of us who have already too great a demand upon our feeble brains in the way of household plans, money-getting and money-stretching perplexities, baby-tending and child-training, and family management generally—we can hardly afford to tell stories at all, but find it far easier to read them from good books and papers. You cannot get the attention of the little ones so well when reading as when talking to them. You have to manage to keep the youngest one quiet while reading to a group. So long as there is a picture to look at, all goes well, but when you must turn over the leaf, the story is spoiled for the wee one. But if he will not keep still, he must be banished to another room. A few seasons of exile will secure tolerable quiet on his part, even when he cannot understand the story. But he wishes to understand, and it is well to throw in some lively running comments adapted to his comprehension.

In making up stories for a child, one must be careful to avoid too sensational a style. I well remember into what a fever of excitement I worked my little niece, by one of my stories about a careless little boy whose thoughtlessness was the cause of his father's death. She lay and cried about it after she should have been asleep, and begged to know "Why *did* Johnny do so?" In vain did I continue the story, and try to carry it on to a more cheerful ending—I could not bring the dead father back to life, and my very sincere little auditor could get no comfort from anything I could tell her. I concluded then only to repeat ready-made stories to children, Bible stories, historical tales, mythological fables; for I supposed that no generous person would refuse to tell stories when asked.

I have more than once referred to a woman I once met who more than any other filled my ideal of what a mother should be, in her conduct with her only child, a boy of 3½ years. I asked her if she told him stories much. She surprised me by saying that she never told him regular stories, though she talked with him as a companion about all sorts of things. She said she didn't want him to know that *she could* "tell stories," as he now thought story-telling a special talent of his auntie, and was inclined to give her little rest from that business whenever he found her disengaged.

The beauty of it is, that if you only give children the raw material for stories, facts of one kind or another, when various subjects interest them, they very naturally fall to work and make their own stories, more or less like those you read to them perhaps. I like their fairy stories better than those which grown up people tell. Every day this summer I get a deal of quiet entertainment out of the stories made over picture books by a little girl of five. These little stories show no precocity of talent or remarkable genius, but I never happened to see another child with such a necessity laid upon her for spinning little yarns to herself.

Some parents condemn the classic Mother Goose stories as utterly bad. I think they have their place, for the rollicking, frolicksome hours, told in sing-song funny style, as recognized nonsense. I don't like the books with their wretched illustrations, and some of the "melodies" themselves are too tragic in their nature, but it is a part of a "liberal education" to know Mother Goose and all her class of foolish-funny literature; and to hear and learn much better things at the same time.

A Mop Wringer.

My remarks on Floor Cleaning, in the May number of the *American Agriculturist*, called forth a letter from the Oneida Community, accompanied by a photograph of the wringer used in that institution. It is unpatented, and is not offered for sale, but the writer says: "Our own folks, and our hired help, think ever so much of them, and have never ceased to express their appreciation of them. You see it is a bench on wheels and castors. It carries one or more pails, (if you please,) one for wringing, the other for rinsing.

"You will observe it has a knuckle-joint press arrangement that parts and closes the rollers. There is a spring that allows all thicknesses of cloth to be accommodated. On turning the crank the

mop wrings out on the same side where it is put in. As a mop is always a short cloth, it is not tiresome to wring it, and there is no farther need of scalding your hands, or 'touching one's fingers to the dirty mop.' *An evenly-made mop* should always be used. When the machine is not required for mop-wringing, *incidental* to its design, it may serve as a water-pail bench, or as a truck to convey heavy things across a room, or to wring cloths."

The writer further says that none of these machines have been put in the market, but if they should be, they would be built of different styles and of comely appearance, and that they could be furnished at about the same price as clothes wringers of the same size rollers.

This wringer is undoubted a great convenience, and I do not wonder that it is highly appreciated by the workers who do the mopping at Oneida Community. But I think wringers like this will not soon be in great demand. They can not be made cheap enough to come within the reach of those who desire them—cultivated women who do their own house-work. Women who love to read, and who value leisure as opportunity for the exercise of æsthetic, social, or intellectual tastes, welcome every thing that enables them to do their manual labor quickly and easily. A large proportion of the women of this class cannot afford to pay much for a mop-wringer. The clothes-wringer saves time and strength, and saves the wear and tear of the clothes which result from ordinary hand-wringing. The mop-wringer saves little besides the delicacy of the hands, which we cannot afford to pay much for, and which we can hardly save any how in our various daily labors as house-keepers. Much as we dislike to put our hands into dirty water, it can hardly be shirked in our daily battle with the powers of this world. People who can afford to buy all sorts of useful implements will hardly take the trouble to supply their hired servants with a mop-wringer, since they are not anxious to save either mops or servant's hands, and nearly all of their rooms are carpeted. The average hired girl does not appreciate many labor-saving contrivances which her mistress values highly. I have had more than one washer-woman at my tubs who thought a clothes-wringer more plague than profit, while I should think the labor of washing nearly doubled if obliged to wring the clothes by hand.

I may be mistaken, but it has long seemed to me that we house-keepers should never find much amelioration of our lot, (indeed it is so with all hand-laborers)—such amelioration as we could and ought to get from the application of machinery, and the great forces of water, steam, wind, electricity, and what not—until the spirit of co-operation enables us to "stop the leaks" which seem inevitable to our present single-handed struggles for existence. Many of the advantages which will result from co-operation fall to the lot of the existing communities, but desirable as these advantages are, they are heavily over-balanced (in my opinion) by disadvantages of another kind.

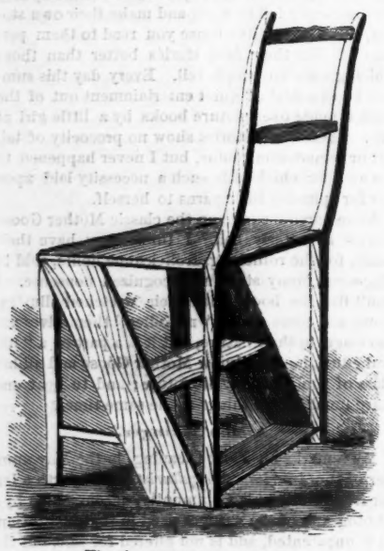


Fig. 1.—STEPS AS A CHAIR.

To return to the subject of mop-wringers—I saw one several years ago which was much praised by its owner—a spiral wire arrangement, screwing inside a pail, price 75 cents. I had a chance to try it and did so, but for some reason I could not make it wring my mop—perhaps it was not made right.

Women in Trousers.

The photograph to illustrate the mop-wringer, gives also a picture of a woman holding the mop in the machine. This photograph passed through editorial hands in coming to me, and called forth comments like these: "At all events, I am not responsible for what Mr. R. may think, say, or do, when he finds you in receipt of photographs of beings in br—trou—pant—or some other kind of loony things, that were formerly considered as distinctive of the male 'sect.' Oh, isn't (he—she) *it* a beauty! It almost makes me want to be a communite, and be where such can be seen every day!"

This kind of wit is too cheap for our friend, the editor, who is opposed to everything like feminine extravagance, and in favor of everything based on common sense. How would he have a woman dress when mopping her floor? The woman in the photograph wears a dress of some plain, inexpensive worsted material, made with Garabaldi, or blouse waist, coat sleeves, and plain skirt pleated at the waist, and reaching but a little below the knee. The lower limbs are modestly clothed in lined trousers, made of the same fabric as the dress, apparently fashioned, like the trousers usually "distinctive of the male sect." I do not know of any costume more suitable for a woman when mopping floors—or hoeing potatoes either. On many a dewy morning this summer, have I seen my German neighbor hoeing potatoes in the field near me, with her calico skirt, made of the usual "womanly" length, draggled almost to her knees, weighed down with dew and dirt. One might suppose that it would be for her convenience, and comfort, and health, to wear short skirts and trousers, but I am not sure that it would, it is so hard for most women to brave an adverse public opinion. It is foolish to scold about public opinion. If it is wrong, all you can do is to labor to educate it. It is not at all strange that we are shocked at the sight of a woman in trousers, all our ideas of women and angels have been, through long ages, so inseparably associated with long and flowing robes—though woman's robes do not "flow" much nowadays, except when they draggle a trail behind, in a manner that would shock all our ideas of decency and cleanliness, if we were not accustomed to it.

I am here reminded of a late idyl, by Coventry Patmore, in the "Pall Mall Gazette": "The Girl of All Periods." This line characterizes well a late fashion, and speaks of "loony things" too. "Her two shy knees bound in a single trouser." But does it not seem a cruel and absurd way to treat any two knees, shy or not? What will not women stand for fashion's sake? When we have got well past it all, (we, the human race), how very absurd it all will seem—the trails, the skeleton skirts of different shapes, the "single trouser," or pull-back, the bustles and panniers! compared with any style of dress, now quite shocking to our perverted taste, which evenly *clothes* the human body without interfering with its free exercise and development.

Until a comparatively recent period, women have not been clothed, but only draped—pinched and distorted above the waist-line, and draped below. It is useless to hoot at women in trousers, for all properly dressed women now wear trousers, as extremely few did half a century ago. These are usually made of white cotton cloth, and drapery is supposed to conceal them, but great numbers of well dressed women now wear, in cold weather, warm-colored woolen trousers over their undersuits and beneath their skirts. So we are gradually getting familiar with the idea of trousers on women, so shocking to all the old ideas of womanliness, and by and by, perhaps, we shall see that long skirts over the trousers, for the sake of woman's conventional drapery, are a luxury we can no longer afford—if not a nuisance we will no longer endure. Then if we must have drapery in motion in order to gratify our ideas of beauty, perhaps we shall put trailing drapery upon our horses—why not? Or is it possible that our ideas of beauty will undergo a reformation?

STEP-LADDERS IN THE HOUSE.—Mrs. J. W. Perhaps you have in mind what is called a "Library Step-Ladder," which you will find figured in the *American Agriculturist*, for March, 1870. You are quite right as to the necessity for something of the kind that can be kept ready at hand. If a window-shade needs to be adjusted, a picture to be hung, or some similar trifle, one must either get the large steps from the shed, or make use of a chair or a table, or both, to reach the desired place. It is a bad practice to use furniture for this purpose; it brings a heavy strain on parts not intended to bear it, and there is danger of breaking as well as of defacing it. Besides, if children and help see the mother use furniture and—what is worse—books for purposes for which they are not intended, the example will be sure to find imitators. The Library Steps referred to, are kept in furnishing stores, and any amateur carpenter can make something that will answer the purpose. Sometimes a combination of a chair and steps is sold; this is shown in figure 1, shut, and in figure 2, open, to use as steps. When closed, this makes a good chair for the front entry or hall, and may be kept there or in some other place where it may be got at without trouble.

Fig. 2.—STEPS IN USE.

Tomatoes, and How to Use Them.

Nothing more astonishes English travelers in this country, than our profusion of vegetables and their cheapness, and when they see tomatoes hawked about the streets by wagon loads, they find a wonderful contrast between the great abundance of these here, and their scarcity at home. More than that, our summers ripen the tomato to a perfection which they can not equal, even under glass. The manner in which the tomato is treated in the English culinary works, would amuse an American housekeeper. One of the best works on eatables and cookery, that we know of, is English, and entitled "Wholesome Fare," wherein we read of the tomato: "It is not common enough in England to be used on a large scale for soups and sauces, but makes a handsome side-dish to accompany various meats, by being boiled whole for about five minutes in any good stock or gravy, and served in it without losing its original form."

In whatever way tomatoes are used, they should be *thoroughly ripe*, otherwise they have the unpleasant odor and flavor belonging to green tomatoes, and which is especially strong in the plant itself. Tomatoes will ripen up after picking, and it is well

to spread out and expose to the sun any that are not fully ripe—as is often the case late in the season.

Raw Tomatoes.

All who eat raw tomatoes, (and few do not), should raise their own, as they can then have them perfectly matured upon the plant. When so ripened, the skin will peel off readily, and without any scalding, a process which should be avoided for those to be eaten raw. The usual way is to serve sliced, and let each season to the taste, as the manner of dressing varies so greatly. Some use salt, pepper, and vinegar; others salt, vinegar, and oil; sometimes a regular salad dressing is made; to some they are only acceptable when eaten with sugar and vinegar, and we have seen persons treat them, like peaches, with sugar and cream. At the recommendation of a friend, who knows what is good, we have tried this way: Peel the tomato, cut it cross-wise in halves, placing the cut surface up; if very solid, gash the central portions with the knife, and put on salt, oil, and "Harvey Sauce," (an English sauce somewhat like Worcester, but milder), and in eating, cut the halves down in solid "junks" instead of slices. Good bread and butter, and a perfect Trophy tomato thus treated, make a breakfast to be thankful for.

Stewed Tomatoes.

One who travels much, finds that the name "stewed tomatoes," covers a great variety of compounds; the average country hotel serves under this name a horrid paste, thickened with flour and sweet with sugar, and we can not blame those who say they do not like tomatoes, if this is their standard. Tastes differ, but to our individual notion, sugar and tomatoes are incompatible. Tomatoes stewed until they are just fairly done, and seasoned with salt, pepper, and butter, (a plenty of that), form a dish quite unlike in flavor to the same treated to a long cooking, in which the pieces are stewed to a pulp, and the juice evaporated sufficiently to make a thick sauce, and seasoned as before. These two methods make a pleasing variety on the writer's table. Many thicken stewed tomatoes with cracker-meal or bread-crumbs, either being preferable to flour, which forms a repulsive paste. Besides the above two variations in stewed tomatoes, the only other we make is to season them with onions. Onion, used judiciously, so blends with and qualifies the flavor of the tomato, that those who approve of onions at all, will find this to be just one of the places where they are acceptable. The onion should be chopped fine, a tablespoonful or so being enough for an ordinary dishful of tomatoes. Especially to accompany roast beef, tomatoes thus cooked are—as Lowell defined poetry to be—"a touch beyond."

Scallopped Tomatoes.

are commended to those who like their tomatoes thickened. The fruit being peeled and sliced, is laid in a pudding dish, with alternate layers of cracker or bread-crumbs, distributing salt, pepper, and bits of butter on each layer, and finish with crumbs. Bake half an hour, and serve in the same dish. If the tomatoes are very juicy, bake with the dish open; otherwise cover, and when nearly done, remove the cover and brown the top.

Baked Stuffed Tomatoes.

Good-sized fruit of regular shape is required. Cut a slice from the blossom end, and scoop out the pulp; take cracker or bread-crumbs, salt, pepper, a little thyme, and butter, mix well together, and fill the cavities in the tomato, rounding it up well, set in a dish and bake for about three-quarters of an hour. Some replace the top piece or stem end, but we prefer to leave it off, and allow as much juice as possible to evaporate. *Another way.* Cut a conical plug from the seed end of a tomato, cutting down half through the fruit, or more, mix dry crumbs with seasoning and butter, as above; form cones or plugs to replace those cut from the tomatoes, and bake as before.

Broiled Tomatoes.

Good-sized, solid tomatoes are cut in halves cross-wise, placed on a gridiron or broiler, and put over a brisk fire, cut surface down. In 8 or 10 minutes, according to size, turn, put upon each half salt, pepper, and a lump of butter, and cook with the skin-side down, rather more slowly than before, about as long, or until done. An excellent breakfast dish.... The above recipes are all proved and approved; the following, untried by the writer, are from excellent sources.

Tomato Omelette.

For an omelette of six eggs, use four medium-sized tomatoes, or fewer if large; peel, cut out all hard and partly ripe parts, and chop fine. Rub two tablespoonfuls of flour into a tablespoonful of butter, mix with the tomatoes, and add salt, with pepper, if desired, stir the beaten eggs into those, and cook as for other omelettes. Unless the tomatoes are thoroughly ripe, cook them slightly first.

Tomato Hash.

Butter a dish, put in a layer of peeled and sliced tomatoes, a layer of cold meat in thin slices, and a layer of bread and butter, and so on until the dish is full; add seasoning to the layers. Pour beaten eggs over the top, and bake brown.—*Home Cook Book.*

Tomato Toast.

Stew tomatoes until done, seasoning with butter and salt, add milk to make sufficiently thin, or cream, when the butter may be omitted, and use this upon slices of well toasted bread, instead of the usual sauce made for dip or cream toast. Said to be a fine breakfast dish.

Corn and Tomatoes.

Equal quantities of peeled and sliced tomatoes, and green corn cut from the cob; stew together for half an hour. Season with pepper, salt, and a *very* little sugar. Stew 15 minutes longer, and stir in a great lump of butter. Five minutes later pour out and serve.—*Common Sense in the Household.*

We have omitted the various uses in soups, sauces, catsup, etc., for want of space.

Canned, or Preserved Tomatoes.

If any housekeeper has been successful in putting up tomatoes in glass jars or bottles, will she please give her process?

Burns and Scalds.

The Household Department has very little to say about medical matters. We notice that some journals have what they call a "Hygienic" column or department, in which are presented numerous recipes for the cure of all sorts of diseases, which form an accumulation of most absurd and unmitigated rubbish. It is in human nature to use remedies for, instead of trying to avoid disease, and convinced that promiscuous dosing does much more harm than good, we have declined to publish the many "sure cures" and "best things in the world," that have been sent us. Still, however we may object to much dosing, every mother should know what to do for slight attacks of illness, and have at hand a few simple remedies to use in sudden emergencies; and what is of still more consequence, she should know how far she can trust to her own knowledge in a case of illness, and when it is necessary to call in greater skill than her own.

Among the accidents which call for prompt treatment, none are more frequent in the family than burns and scalds, and each mother has her favorite application, which, so far as it tends to exclude the air from the wounded surface without irritating it, is useful. Doct. G. F. Waters, of Salem, Mass., has recently discovered a most effective remedy for burns and scalds, which is so simple, and always at hand, that we give it for the benefit of our readers. It is merely to sprinkle the injured surface with the Bicarbonate of Soda—the common baking soda—and cover it with a wet cloth. When the burn is only superficial, the pain is said to cease instantly, and but one application needed; where the injury extends deeper, longer time and more applications will be required. To show the efficiency of this remedy, Dr. W., at a meeting of the Mass. Dental Society, made an illustration in his own person; in presence of the meeting he scalded his wrist with boiling water, in one place making a deep scald, by applying boiling water with a sponge for 30 seconds. The pain at once ceased on the application of soda, covered with a wet cloth, and the next day, all but the part intentionally burned more severely than the rest, was practically healed, and that portion was healing rapidly.

BOYS & GIRLS' COLUMNS.

Cute but Naughty—were some boys in England. The Bullfinch, a common bird in that country, is often kept in cages, as it is very easily tamed; it has a sweet and pleasing song of its own, and besides this, may be taught to whistle tunes. For these reasons the birds can be readily sold. The boys knew that if they could catch bullfinches they would bring them pennies, but as sparrows were more plentiful and easier taken, they caught sparrows. While the two birds—sparrow and bullfinch, are much of the same size, their plumage is quite different, so the young rascals went to work, and with black for the head, wings, and tail, and some red for the breast and belly, the painted sparrow looked so much like a bullfinch that, if it would only stop its chatter long enough, it might be easily passed off for one. The boys sold their painted sparrows, and getting for them the prices of bullfinches, they got money—but they also got something else—an introduction to the magistrate, and a chance to go for a while where bad boys, rather than sparrows, were caged.——We have seen something like this in New York. Several years ago a man was on the streets with a pair of bright crimson fan-tail pigeons, which he offered for sale. It must be a very dull person who could not see at a glance, that these were white pigeons with their feathers stained with red ink, or some other crimson liquid, and were a barefaced cheat.

A VIEW OF THE PHIZ-PHIZ FALLS, SHOWING SOME REMARKABLE FEATURES IN THE SCENERY.

Aunt Sue's Chats.

LILLIE F.—To make a simple and pretty "Scratch My Back" (for matches), take a piece of perforated cardboard; about 80 holes one way, and 65 the other. Work

Fig. 1.—SCRATCH MY BACK, COMPLETE.

it with red, blue, or any colored worsted you choose, like figure 1. Figure 2 will show you how many holes to take in working the marginal squares. You can get patterns for the letters at almost any worsted store. When you have finished the squares and the letters, cut the cardboard around the outer points of the squares in the next row of holes to those worked with the worsted. Now lay this cardboard on the wrong side of a sheet of emery paper (or fine sand-paper), and mark it around the

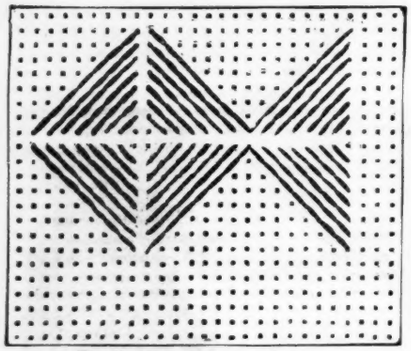


Fig. 2.—THE WAY OF WORKING.

points with a lead pencil. Cut the paper in the penciled line, all around. Fasten the paper on to the cardboard with the same colored worsted with which you worked it, by one long stitch on the paper side, from point to crotch, and a small stitch on the cardboard side, all around the edges. Figure 3 will show, by the white lines,

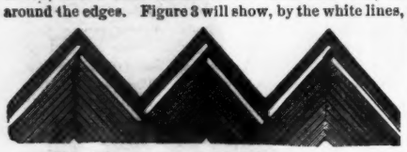


Fig. 3.—HOW TO MAKE THE STITCHES.

how to put the stitches on the back. Fasten little worsted tassels to the points, as in figure 1, and attach a twisted worsted cord (with tasseled ends) by which to hang it.

ALVA M. S.—No, "Prussian blue" does not necessarily "come from Prussia." Chemically speaking, it is a compound of two cyanides of iron, and its composition is altogether too complex to be understood, except by those who have made considerable progress in chemistry.

C. S. CAMPBELL—In answer to my question concerning his relationship to E. D. Campbell—says, "I will say, as Senator Cameron did, upon being asked if he was related to another gentleman of that name—'That in all probability their forefathers stole cattle together on the Scottish highlands, but he was not aware of any nearer relationship.'"

JUNE 1st, 1877.

Dear Aunt Sue:—I wonder if any of the *American Agriculturist* girls have tried to ornament ginger-jars, I have, and have succeeded so well, that I want to tell the rest how to do it. It is a very cheap, as well as beautiful way of decorating, and they are almost as handsome as the Japanese and Chinese wares that are so much sold now. Take an old ginger-jar; get some of the French pictures that are sold everywhere (you will want three or four large ones for center-pieces and small ones to put around them); flowers, butterflies, and birds, are the prettiest, (place the butterflies and birds as if about to alight on the flowers), or if you wish to have your jar Japanese or Chinese, get Japanese or Chinese figures and animals. Then gild a rim around the top and bottom of the jar with the gilt-paint, which can be procured at the Japanese stores; do it with a small camel's-hair-brush, and make little dots of gilt all around between the pictures with the end of your brush; do not have them too even, or they will look stiff. Some people paste gilt-paper around, in place of the paint, but gilt-paint is much prettier and wears better. Now varnish your jar with the best of coach-varnish, right over the pictures and gilt, and set it away to dry, and it is done. If you choose, you can paint your jar black before ornamenting, some think them much handsomer so. I have made a very pretty card-receiver by painting black a common breakfast-plate with little raised figures on it, and gilding the figures, a rim around the edge, and a circle in the middle; then pasting on little pictures between the gilt figures, and varnishing it. Always use dissolved Gum-Arabic for glue, as it does not stain the pictures. The tall brown earthen jars, that almost everybody has, are very pretty ornamented in the same way for scrap-jars. You cannot imagine how pretty they all are, until you have seen them, and I presume some of you will like to try it. It is not difficult work for any one who is neat and patient.

FANNIE L. CLARK,
North Branford, Conn.

FANNIE L. CLARK sends a letter, for which we are much obliged, giving instructions for decorating jars, etc. I know they are quite effective and pretty, and I have no doubt but what many of my nieces will at once try the experiment. Suitable pictures can be procured at the stationers, and if you have no Japanese stores in the neighborhood, you can perhaps get the gilt paint at the paint-stores.

MARGARET T.—"Clara Josephine" was delighted with the pretty feathers, and says "ta-ta" for them.

A LITTLE CORRECTION.—"C. H.," Elizabeth, N. J., calls attention to the fact, that in the May "Chats" the word "Carnival" is said to be from "*carno*, meaning flesh." This is a mistake of the types; it should have been from *caro*, meaning flesh, that word being declined *caro, carnis, carni*, etc. Thanks to "C. H.," who pointed it out in time, but the direction on his letter being 245 Broadway, it did not go direct to Box 111, Brooklyn, for a long time.

The Doctor's Correspondence.

The letter budget for this month is very small, and I do not at all wonder at it. I think it vastly better that the boys and girls should be enjoying themselves in the open air in these summer days, or in the warm evenings to be watching the fire-flies, and listening to the music from various insects that fills the air, and enjoying the pleasant company of family and friends, than to be in-doors poring over books, or writing. There is a time for all things, and with cooler evenings, I have no doubt that numbers of my boys and girls will have a plenty to tell me of what they have done and seen, and no end of questions to ask as to things that they wish to know more about. Mind, I don't say that you are not to write in warm weather, only I don't blame you, if you prefer to do something else.

DO CATERPILLARS STING?

This question is asked almost every summer, and now "W. G. C.," of New Jersey, sends me specimens of the caterpillar "which stung him." He was picking a piece of "Wild Indigo," a rather common plant, when his hand suddenly felt as if touched by fire; upon examination, he found three greenish caterpillars upon the branch, and naturally came to the conclusion that they were the cause of the hurt. He was right—they were, and yet they did not *sting* him, in any proper sense of the word, or in anything like the manner in which a wasp or bee would sting. The proper sting of an animal or plant (such as nettles) is a sharp pointed hollow tube, at the bottom of which is a little bag containing a liquid, which, when the least drop of it passes into the flesh, causes a poisoning of the parts, with great pain and swelling. A prick with a needle will cause pain, but this is not a sting, so the sharp down of some plants, which consists of very minute hairs with barbs on them, will easily enter the skin and cause intense burning and itching, but these are not true stings. Many suppose that the

GREAT GREEN TOMATO WORM,

because it has a horn on its tail-end, must sting, and are afraid to remove it from their vines for fear of being hurt. This creature, though not handsome, is harmless, and can neither sting nor bite. There are very few caterpillars, and these not common ones, that have jaws strong enough to give even a painful pinch, and these few are in no manner poisonous. But to return to the case of our New Jersey friend: his caterpillar, shown in figure 1, is the larval state of a very pretty moth known as the Io moth. One of the early entomologists gave this insect the fanciful name of *Saturnia Io*, Saturnia being one of the names of the goddess Juno, and Io was one of her priestesses. I believe that the students of insects have other names for this at present, but Io moth is a very good common name. The male of this moth, which is shown in figure 2, is of a deep yellow color, with purplish brown markings on the fore-wings, and on each hind-wing, a large blue spot, with a black border and a dash of white in the center. The female is somewhat larger, and different in color, the wings being generally purplish brown, with gray markings, but it has similar spots on the hind-wings. The caterpillars are hatched about the end of June, and are found on a great variety of plants, including corn and cotton, and the willows, poplars, and wild cherries, among trees. The caterpillars are of a beautiful pea-green color, and have on each side a brown stripe, edged on the lower side with white. On each ring of the body are several elevations, and these

Fig. 1.—IO CATERPILLAR.

Fig. 2.—IO MOTH.

bear clusters of about 30 stiff hairs, which are green and more or less brownish or blackish at the tip. It is, on the whole, a very pretty caterpillar,

BUT DON'T HANDLE IT,

as these hairs, or spines, are very sharp and brittle, and enter the skin at the least touch, making their presence known in the most positive manner. These are all the "stings" that any caterpillar has, and there are several others that are capable of wounding in a similar manner. Mr. Riley, the celebrated entomologist of Missouri, says, that he knows of 15 different caterpillars with hairs of this kind. Of course, all hairy caterpillars do not wound, but in handling those that you do not know, it is well to be cautious, for, though no serious trouble follows their pricking, it is far from pleasant for a short time....Here is another letter about insects, this time from Connecticut, and

ABOUT A WASP AND A CATERPILLAR.

A little wasp was seen dragging a large cabbage caterpillar, and the writer wishes to know what it was doing this for, as the same thing has recently been noticed several times before. The box in which the insects were sent fared badly in the mail, and as I could only find the fragments of the wasp, I can not tell which one it is. The wood-boring wasps, the mud-daubers, and others, have a curious way of providing food for their young. Wasps, like bees, raise their young in cells, though not waxen ones. A cell is bored in an old stump, or is built up of mud, or other material, and an egg laid in the cell, which is then closed up; the egg hatches, and the grub or larva makes its growth within the cell, undergoes its changes there, and at length comes out as a perfect wasp. But to do all this, the young grub of a wasp must have food, and instead of providing it, as the bees do their young, with bee-bread, a delicate vegetable food, which is the pollen of flowers, the young wasp is supplied with

A STORE OF FRESH MEAT,

which is laid in the cell for its use. Caterpillars, spiders, house-flies, and other insects, are put away in the cell with the egg. If these were lively, they would be troublesome to get into the cell, and after they were there, and if they were dead, they would spoil before the grub wasp was hatched and ready to eat; so the old wasp stings the caterpillar or other insect in such a manner and just enough as to keep it quiet, but not so as to kill it, and in this stupified condition it is stored away in the cell. Wasps have been known to sting and carry off grasshoppers and other insects much larger than themselves. It is supposed that the poison of the wasp preserves from decay the caterpillars, etc., provided for food. At all events, it is a very curious way of feeding baby-wasps. ....The next letter is not about insects, but contains a plant from Master George B. G., who lives in New Hampshire. George wishes me "to name the plant if there is a name for it." It would be a very wonderful thing if he, or any other of my young friends, who live in the older parts of the country, should find a plant that had never been named. I do not say that this is impossible, but it is nearly as unlikely as the finding of a

diamond. This plant is a very old one, and is not a native of this country, but a wanderer from Europe.

ITS COMMON NAME IS "MUGWORT";

its botanical name is *Artemisia vulgaris*. It was named *Artemisia* in honor of *Artemis*, a goddess of the ancient Greeks, who was the same as the Roman *Diana*. As there are several Artemisias, this was named *vulgaris*, meaning common, it probably being the most abundant in Europe. The Wormwood is another *Artemisia*, the "Southern Wood," or "Old-man," or "Boy's Love," another, both found more or less in old gardens, while the common shrub on the western plains, called "Sage-bush," from its color, is still another and a native *Artemisia*. Before beer or ale were used in England, the people made various bitter drinks, and this was called Mugwort, because it was used to flavor the contents of the mugs out of which our forefathers' forefathers drank. In olden times, when people used to dose much more than they do now, almost every plant that had a strong smell or a disagreeable taste, was supposed to be good for some disease, and this, with many others, was cultivated in gardens. This was probably first brought to the country as a garden plant, and it is now found here and there, scattered along roa':-sides and in such places, but not very abundant....Master Norton, of New Jersey, wishes me to tell him

THE NAME OF A TOAD OR A FROG,

which he found in the woods. If my young friend had sent a drawing—and every boy and girl should learn to

Fig. 3.—GREEN TREE-FROG.

draw—or even a full description, I might have made a pretty near guess, but all the description he gives is: "It was a dull lead-color, just about the color of the dead leaves in the woods, and could hardly be told from them."—From this I *guess* Tree-frog, or as it is generally called, Tree-toad, a little animal that is quite common in all the Northern and Middle States. This is able to change its color to a remarkable extent, and it is for this reason that it is so seldom seen, as it becomes so near the color of the bark or dead leaves, that even a sharp-eyed boy would pass without noticing it. But it makes up in being heard, and almost anywhere its voice goes far to help make up the general hum, so noticeable in the country on summer nights. It is particularly noisy before a rain. I can tell master Norton and all the rest, how to surely know the *Hyla*, or Tree-frog, as that has the end of each of its fingers and toes spread out as a round flat disk, as in figure 3; this is quite sticky, and helps the animal to cling to smooth surfaces. The toes have a web extending between them for more than three-fourths of their length. In the southernmost States, another species is found in place of ours, and differs from it in being of a bright green. This is the Tree-frog shown in the engraving, which is given here to show the feet and toes, those of the more northern species being like these..... One inquiring boy wishes me to describe the

METRICAL SYSTEM OF WEIGHTS AND MEASURES,

and I am glad to see an interest felt in this, for it is something that every boy and girl should know about, as the time will come when it will be in general use in this country. It is perhaps a rather dry subject to tell all about at once, and I will give a part at a time, but first I think it will be well to say something about the weights and measures we have in use. All savage people, if they have measures and weights at all, take them from some natural objects, and in less advanced oriental countries, seeds are still used for weights. Some tribes use a tortoise-shell for a measure, and even in civilized countries women measure by fingers. Many years ago I bought some wagon-loads of corn from the Pimo Indians, a farming tribe in what is now Arizona. The corn was brought in small lots, and paid for in cotton cloth. It was agreed that I would give a *vara* of cloth for a certain basketful of corn. A *vara* is the Mexican yard, and shorter than our yard by about three inches. But we could not go on with our trade until we had agreed on what the *vara* should be—inches they knew nothing about; their idea of the measure was, that it was the distance from a man's nose to the ends of his fingers, when the arm was stretched out as far as possible. My nose and fingers would not suit, and it was only after getting the longest-armed Indian of the tribe to stretch his very utmost, that we fixed upon a *vara* that would suit, and when this was marked upon a stick to the satisfaction of all the head men, who all talked their jabber at once, that business went on smoothly. You may think this a droll way of fixing upon a measure, but when we use a rule or a yard-stick, we measure with something that had quite as rude a start. You read in your tables that

"THREE BARLEY-CORNS MAKE AN INCH,"

perhaps without thinking that the measures of length we now use, are established upon three grains of barley—or barley-corns. Then in the table of weights, we find a similar starting point: 24 grains make a penny-weight, and 20 penny-weights make an ounce. The weight of the coin was first fixed, and the coin served for the starting point of the larger weights. In England, in the reign of Henry III. (1266), a law was enacted that the penny "shall weigh 32 grains of wheat well dried, and out of the middle of the ear." Later this was altered to 24 grains for the weight of the penny. From the penny, ounces and pounds were derived; then from pounds came both liquid and dry measure; eight pounds were a gallon of wine, and eight gallons of wine, a bushel. This, with 24 grains to the pennyweight, 20 pennyweights to the ounce, and 12 ounces to the pound, was originally the only kind of weight used in England, but is now used almost solely for the precious metals, and called Troy weight; what is known as Apothecaries weight, has the same pound, ounce, and grain, but the ounce is divided into scruples and drams. It was many years afterwards that the Normans brought the Avoirdupois weight into England, where its use was by law confined to certain articles, including butcher's meat, but it finally became the general weight used in nearly all trading. The pound Avoirdupois is 7,000 grains, while the pound Troy is 5,760 grains. There being different weights in use, and no means of finding out if any were correct, the British Government in 1824 had a standard pound, and a standard yard made, with which all others must agree, and these were to be in the care of the Clerk of the House of Commons. But the Houses of Parliament were burned in 1834, and away went Britannia's yard-stick and weights, and there was the greatest possible trouble in fixing upon new ones. As in all such matters, our customs came from England, we had, originally, and still continue to use these old weights and measures, which started with barley-corns and wheat grains. There is nothing to be said in their favor, except that we are used to them, and no objection to a much better system, other than that

IT IS TOO MUCH TROUBLE TO LEARN IT.

The greatest objection to our present system is, that there is no true standard by which we can test them, and if the particular weight and measure which the Government procured from England, to serve as the standards from which all others must be copied, and with which all others must agree, should get destroyed, there is no very certain way of renewing them. This short talk about our present weights and measures, will show you some of the reasons why we should have a better system, and it is agreed by all who have thoroughly studied it, that what is known as the Metrical System, is vastly better than any other. I will try at another time to tell you something about this Metrical System.

Aunt Sue's Puzzle-Box.

COMPOUND CROSS WORD.

My first is in figure but not in sum,
My next is in finger but not in thumb,
My third is in George but not in Bill,
My fourth is in garden but not in hill,
My fifth is in eager but not in rash,
My sixth is in girdle but not in sash,
My seventh is in paint but not in dye,
My eighth is in cunning but not in sly,
My ninth is in cake but not in pie.
Now, if these letters you will duly place,
A girl's name and a boy's name you may trace.

NIP.

DIAMOND PUZZLE.

1. Part of Spain. 2. An age. 3. Strong. 4. A European country. 5. A bird. 6. A cover. 7. Part of France.

The central letters, horizontal and perpendicular, name a country. ITALIAN BOY.

DECAPITATIONS.

1. Behead-to rebuke, and leave-to conceal.
2. Behead to draggle and leave a piece of timber.
3. Behead to leap forth and leave to unite.
4. Behead a vision and leave to stretch out.
5. Behead a kind of sand and leave a musical instrument.
6. Behead to long for and leave to merit.
7. Behead immense and leave a model.

GEORGE H. FULLER.

BIBLICAL ENIGMA.

I am composed of 24 letters:
My 3, 16, 23, 9, 17, was a province of Arabia.
My 10, 4, 19, 13, 22, was a city of Bashan.
My 11, 17, 21, 5, 19, was a mountain of Palestine.
My 12, 7, 15, 20, 8, was a companion of Paul.
My 16, 2, 14, 17, 6, was a king of Tyre.
My 18, 17, 16, 20, 6, was a Jewish prophet.
My 24, 11, 14, 17, 1, was used by the children of Israel in making brick.
My whole is a biblical maxim. ISOLA.

PUZZLE.

Take half of a bird, two-thirds of a cat, three-quarters of a lion, half of a bear, and a quarter of a yard, and make a book. BELLE.

ALPHABETICAL ARITHMETIC.

G A Y) O E F L L (L L O
O G L
O R L
O G L
E S L
W Y E
O W ANNIE FARMER.

CONCEALED SQUARE WORD.

1. That Bass's ale makes him sick, and no wonder.
2. Did Emma bid Edward good-bye?
3. After a counsel, I mitigated his punishment.
4. He led, I led, and we both led the party at different times.
5. We met Erastus on the avenue driving a sorrel horse. BILLY BUTTON.

CONCEALED PROVERB.

That is a long time ago, O! Dan. Villains do especially congregate in that den: I saw a knot of them come to grief early this morning. Their respectable appearance is all a sham,—mere humbug. T. E. D.

PI.

A toneforapi-krame yass hatt, fo lal durtufaceman nights, soapin brea het stoblen tharcrace, inces heyt rea clifdesasi sa begin drang, ripthng, dan qnears.

METAGRAM.

Select a word of four letters in which may be found (inclusive) four verbs, four substantives, three adverbs, one preposition, and one exclamation.

DOUBLE ACROSTIC.

The initials and finals form the name of a favorite authoress.—1. A girl's name. 2. A Hebrew proper name. 3. A Saxon proper name. 4. A Spanish proper name. 5. The name of a Scottish novelist. 6. A precious stone. BEATRICE.

SYNCOPATIONS.

1. Syncopate very swift, and leave a hostile incursion.
2. Syncopate a gum, and leave part of a barness.
3. Syncopate a black-man, and leave a cruel tyrant.
4. Syncopate to surround, and leave a vegetable.
5. Syncopate a useful article in the kitchen, and leave ire.
6. Syncopate something laughable, and leave the front.

ITALIAN BOY.

ANAGRAMS.

1. See tin harps.
2. Song verse.
3. Arouse gout.
4. Rent tubes.
5. O! redeem bird.
6. In clam pots.
7. Beach trial.
8. Cure babe.
9. Absurd tales.
10. 'Tis odd lace. EMILY.

ENIGMATICAL BOUQUET.

1. A source of great vexation to a lone man. 2. A perennial and a wine. 3. A metal cane or stick. 4. A boy's name and something connected with most birds. 5. A sugared letter. 6. A rich man made of baked clay. 7. The fountain of contentment. 8. The head-covering of a certain man. 9. Two things often seen on the breakfast-table.

BLANK REVERSALS.

(Fill the second blank in each sentence with the word which fills the first blank, reversed. *Example*—He heard *raps* upon the *spar*.)

1. Would you not —— to see —— if he were living?
2. During the —— we could only get —— food.
3. We occupied a large —— on the ——.
4. She —— there, for I —— her.
5. The —— fell into the bucket of ——.

ANSWERS TO PUZZLES IN THE JULY NUMBER.

ANAGRAMS.—1. Yesterday. 2. Dignified. 3. Endeavor. 4. Solicited. 5. Destroyed. 6. Afterwards. 7. Gymnasium. 8. Physician. 9. Entertains. 10. Commissioner.

EASY ANAGRAMS.—1. Horse. 2. Ivory. 3. Table. 4. Chain. 5. Reason. 6. Contain. 7. Potatoes. 8. Through. 9. Between. 10. Reader.

NUMERICAL ENIGMA.—Where there's a will there's a way.

Send communications intended for Aunt Sue, to Box 111, *P. O., Brooklyn, N. Y.*, and *not* to 245 Broadway.

☞ Correspondents will save time, if they will address their letters to me, *until the first of November* (not afterwards), to "Rowayton, Fairfield Co., Conn."

LONG-LEGGED BIRDS.—THE WHOOPING CRANE—YOUNG AND OLD.

You do not have any difficulty in telling a bird from any other animal; though birds among themselves show wonderful differences, yet you are never in doubt whether a particular specimen is a bird or not. Yet how great the difference between a humming-bird, not larger than some insects, and with a flight so rapid that you can hardly see its wings, and a domestic goose, which rarely flies, is awkward in all its movements, and large enough for a dinner for a whole family. Some birds feed only on other birds, or small quadrupeds, and such other animals as they can catch; others live on insects; still others find their food in various seeds and fruits; then when we come to the sea-shore, or the great lakes, we find birds that live upon fish, which they catch in deep water, or along shore, where the water is shallow. If birds all lived upon one thing, they would soon find a scarcity of food, and it is very interesting to observe that each class of birds is so formed that it can best get its living in one particular way. A look at a hawk, with its fierce bill and powerful claws, shows that it is intended to prey upon living creatures; if a duck, with its broad, blunt bill, and clumsy web-feet, should try to carry off a young rabbit, what poor work it would make of it! It would get along no better than would a hawk if obliged to swim and dive to the bottom of the river for its dinner. Wherever we look, whether at birds, at quadrupeds, or other animals, or even at plants, we find that each and all are especially adapted to live in a certain manner, and in particular places, and it is not possible for any thinking person, even a child, to fail to see that all this has not happened by chance. Men do not build locomotive engines to run upon the water, or construct steam-boats to travel on the land, and it is very plain that the Creator designed these different forms of birds and other creatures for a particular purpose. If a naturalist is studying birds (and it is so with other departments), he finds those which get their living in a particular manner, are constructed, or built, so to speak, on a similar plan, and he groups the birds according to this plan as shown in their structure. You would not class the duck and the hen, or the pigeon and the hawk together, and while you, perhaps, could not tell at once all their differences, you know that they are fitted in their feet, their bills, and all their parts, each for a particular mode of life. Everybody, even young people, are naturalists to some extent. Those who make a special study of birds, are called *ornithologists*, as they study ornithology—a pretty long word, but perhaps it will not seem hard or difficult to remember if you know that it means "bird-discourse," or as we may say "bird-talk"; the name, when it was found necessary to have one, was make from the Greek *ornis*, a bird, and *logos*, a discourse, and means the science of birds. Ornithologists differ as to the manner in which they group or classify birds, but they nearly all agree in having a group or order of Waders. These are birds with very long bill, neck, and legs, and a very short tail; the leg is also bare of feathers for some distance above the lower joint, and they mostly live in marshes, or on the shores near the water. These are further divided into several sub-orders, on account of minor differences, but they all agree in the leading points here named. The Waders include birds of various sizes, from the little plovers and sand-pipers, up to the bitterns, the herons, and the cranes. To show the general appearance of the Waders, and at the same time give the portrait of a rather rare bird, here is a picture of what is called the Whooping Crane, which is found in the States of the Valley of the Mississippi, in the Gulf States, and occasionally in the Middle States. It is one of the grandest of our native birds, it being between four and five feet long. Its plumage is entirely white, except some black on the wings, its legs are black, the head carmine. The two birds shown in the engraving, are not different cranes, but an old and a young one. The young does not appear in a white dress the first season, but goes about in modest gray and brown, and it has been mistaken for a different bird. The flight of this crane is very high and rapid, and as they pass far over head, their coarse note, which gives them the name of Whooping Crane, may be heard for a great distance. It is stated that when mating, the male birds have severe fights, and that their cries at this time have been heard for three miles. They feed upon small fishes, frogs and other reptiles, and upon the roots of various plants that grow in muddy places. As they pass from North to South, they are said to stop on the sweet-potato fields, to search for any potatoes that may be left in digging. Travellers on the far western prairies, where the air is so peculiar that all distant things are strangely magnified, tell numerous stories of being deceived by this bird. One teamster followed one of these cranes for several miles, thinking that it was a mule that had strayed from the camp; and an old hunter has been known to crawl a long distance on his belly to get a shot at what he took for an antelope, and he only found out his mistake when his antelope took wing and flew off as a Whooping Crane. They are exceedingly quick to catch the least sound, and if once alarmed, they keep on the alert. It is said that these birds were formerly found in New Jersey and other Eastern States, but they have been killed off or frightened away from all the thickly settled parts of the country. That any one should wish to kill such a noble bird, that is not useful for food, and does no harm to any one, seems not only thoughtless, but wicked. We do not envy the feelings of one who, for the sake of shooting something, can stop the flight of this beautiful white Crane, and see it drop a lifeless mass of useless flesh and blood-stained feathers. Audubon states that they become very tame in captivity, and he gives an account of the odd and suspicious ways of one that he had.

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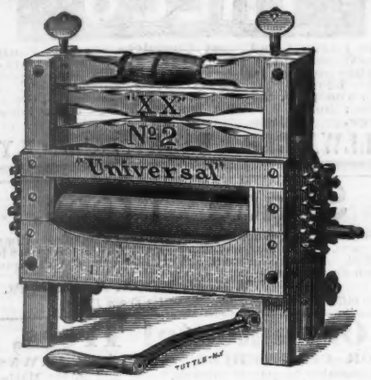

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We annex a sample of the testimonials we receive daily from all parts of the country:

ST. LOUIS, Mo., June 8, 1877.

GLOBE NAIL CO., BOSTON, MASS.

Gentlemen: Find enclosed advertisement and postal card concerning your Nail. [Referring to a scurrilous advertisement and postal card, disparaging the Globe Nail, circulated by a rival manufacturer over the humbug signature of "Humane Society for the Prevention of Cruelty to Animals." No Society bearing that title ever existed.] As I take a great interest in the prevention of cruelty to animals, —horses in particular,—I desire to say a few words in favor of **The Globe Nail.** Though I am not a very extensive Horse Shoer, yet I have used enough Nails of the different makes to speak knowingly. I have used the Globe Nail in my shop and on the race track for six years, on all classes of horses, from the heavy draft horse to the tender footed running horse; and I can safely say **it has no superior in point of Toughness, Shape, and Finish, if it has any equal.** I have used about fifteen hundred pounds of Globe Nails a year for the last six years, and in that time I have found four imperfect Nails, two of which I returned to you about two years ago and received in return four perfect ones, for which accept my thanks. If my men had no better sense than to drive those imperfect Nails in a horse's foot, I would not consider it the fault of the Nail if the horse was lamed. If bosses would look more to the competency of their men and less to trying to get shoeing nails a few cents a pound cheaper, we would have fewer lame horses. I **know for safety and durability, with a man who understands his business to drive them, your Nails can't be beat!** I am willing to pay, without any suit, for all horses that are lamed in my shop by using the Globe Nail. As long as it is made as at present, I shall continue to use it, even if I could get other Nails for nothing. I consider it the safest Nail that was ever driven in a horse's foot.

Yours Very Respectfully,
(Signed.) P. H. O'NEILL,
Horse Shoer, No. 1067 Broadway.

P. S.—I think I could get every boss in St. Louis to sign this if I thought it necessary. P. H. O'N.

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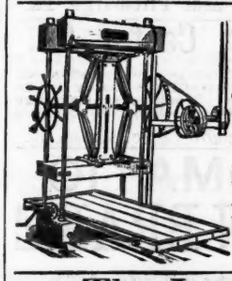
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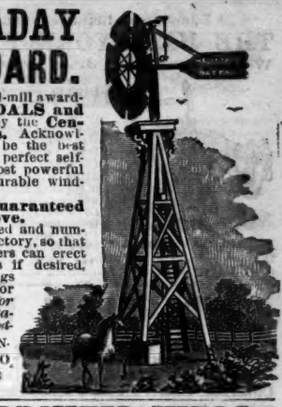
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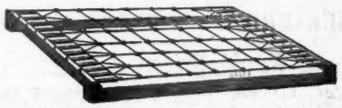

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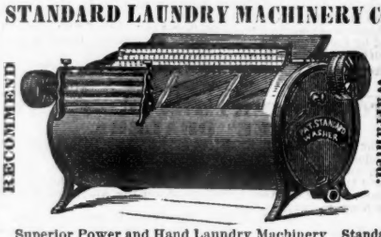

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ORANGE JUDD COMPANY,
245 BROADWAY, NEW YORK.

containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Continued from p. 329.

Sweetness From Florida.—A sample of syrup from cane, not sorghum, but the true sugar-cane, is sent by Col. Oliver, of the "Florida New Yorker." The syrup is similar in quality to the "Golden-drip," and other brands sold in the stores, and as a little over an acre yielded 14 bbls. of 40 gallons each, those who go to Florida need not be without the sweets of life. The capabilities of Florida as a sugar-producing State, have been overlooked in the excitement over orange culture, and we have long been of the opinion that the cultivation of the cane and the making of sugar, is to be one of the leading industries of the State.

"Japanese Wheat."—A correspondent in Ark. wrote to ask about the value of "Japanese wheat," the seeds of which were offered, and wonderful stories told about it. As this was one of the "novelties" that had thus far escaped us, we asked him to send us a sample. It came and turned out to be the "same old six-pence"—a variety of "Durra," or *Sorghum vulgare*, and no more a "wheat" than it is a "rice." It is a variety with brownish seeds, quite as dark in color as those of some of the syrup sorghums. We suppose there is no ready way of legally suppressing those chaps who offer seeds under false names, but all farmers, especially those who read the *American Agriculturist*, should know that valuable varieties of grain, or any other plant, do not usually make their way into cultivation through obscure dealers in small towns in Tennessee, or any other State.

Roots for Stock-Feeding, a manual on their value and cultivation, is issued by David Landreth & Sons, the well known seed-growers of Philadelphia, Pa. It treats upon the relative value, methods of cultivating, harvesting, storing, and feeding of the different varieties of turnips, beets, carrots, and parsnips. Root culture, though rapidly increasing in this country, is still in its infancy, and whatever will extend a knowledge of its importance among farmers, is welcomed as useful. The appendix on Beet Sugar, while showing its importance in other countries, and the desirability of its production here, should have set forth more distinctly the impracticability of its manufacture on a small scale, and the causes of the utter failure of all former attempts made in this country on a large scale.

A Montana Stock Farm.—A few years ago Montana would have seemed one of the most unlikely places in the world to have looked for a fine stock breeding farm, with a herd of valuable pure Shorthorns. But now this thing has been accomplished. We look back at the rapid growth of the cattle interest in this far-off corner of the country with something like amazement, and wonder to find the best quality of grade cattle coming to Eastern markets from what was, half a dozen years ago, supposed to be a worthless and unapproachable desert. It is due to our railroad system, that cattle and other live stock can now be brought from the heart of the Rocky Mountains to the sea-board, with as little trouble and cost, as formerly they were brought from Western New York or Ohio. It is now, we believe, a fact, stated on good authority, that Montana, in proportion to population, owns more pure-bred Short-horns, than any other State or Territory, Kentucky alone excepted.

The Woodruff Scientific Expedition Around the World.—This is to be, in short, a floating college. A ship with a complete outfit in materials, and a full faculty of instruction, will start in Oct. next, circumnavigate the globe, and return in 1879. For pamphlets, giving terms, etc., apply to the Corresponding Secretary, Daniel Macauley, Indianapolis, Ind.

Black-Faced Scotch Sheep.—This hardy race of sheep has a well deserved character for prolificness. A flock of 260 cross-bred black-faces, in Scotland, produced on the average the present season more than two lambs to the ewe. A few years ago a flock of 60 ewes of this breed reared 121 lambs. Notwithstanding much exposure on their rough pastures, these sheep thrive and increase rapidly, producing excellent mutton. It would certainly seem that there is a place for these valuable sheep in many parts of America, where they might improve our common kinds.

"Full Blood" and "Thoroughbred."—"R." There is no difference between these two terms as they are generally used; each means an animal belonging to a pure and distinct breed. In reality, there is no such thing amongst our domestic animals as a purely bred race, unless it be perhaps the Devon race of cattle. All the others have either been built up within a comparatively short time, or they are of mixed blood. The only pure races are the wild buffaloes, deer, etc.

Weakness in Pigs.—"W. V. C.," Troy, Ind. Fat sows are very apt to drop weak pigs. Pigs farrowed by such a sow, when they come weak, are rarely raised successfully. It is best to breed from sows that are not so much disposed to make fat; and choose only those that may be kept in a more moderate condition. For weakly, new-born pigs, there is nothing better, as a stimulant, than some warm water and gin, given with a teaspoon. After having this, they may be put to the teat, and as soon as they suck, they will be past danger for a time. To give a sow in pig a mixture of rosin, sulphur, saltpeter, copperas, madder, black antimony, assafœtida, and arsenic, might easily do mischief to the pigs.

A Stable for $25.—"R. H.," Monticello, Ill. It is hardly possible to make a building that can be used as a cow-stable, hay barn, and corn-crib, for $25, unless under some peculiar circumstances the material can be procured without money. A building 16 x 24, of the roughest kind, will require more than $25 worth of lumber or other material.

The Foreign Meat Market.—We have already stated our opinion about the probable continuance of the export trade in meat—viz., that it is merely a sort of safety valve by which the pressure of adverse markets may be relieved, and prices kept up to a certain standard; this standard being the price here, which is equivalent to the price in England with expenses deducted from it. This view of the business has been shown by events to be a correct one. The depletion of the supply by shipment has raised the market price here, until exportation will no longer pay, and it is now falling off. The effect will be to throw an additional quantity on our market and to depress prices. Then shipments will begin again. This sort of "seesaw" character will necessarily belong to the business until our product is largely increased, which will probably happen in three or four years, when the trade may take on a permanent character. It is a matter of certainty, therefore, that the supply of beef can never more depress our market below a remunerative rate, however large it may become.

How to Improve a Worn Out Field.—"T. H. R.," Defiance, Ohio. A field that has been worn out by growing corn, could hardly be made fit for corn again by growing a crop of rye to plow under. To sow the field to rye this fall, and then to clover in the spring, and let it remain in clover for two or three years, would be more likely to improve its condition.

Death of a Noted Horse.—The well known trotting mare, "Lady Thorne," died on July 1st, at the Fashion Stud Farm, Trenton, N. J. This mare was very successful on the course, until an accident happened to her at Rochester, in 1870, which caused her withdrawal. She ran 61 races, winning 51 of them, and $61,125 in money. She leaves but two descendants, one, General Washington, which is a very promising bay colt, and a two-year-old filly.

Preservation of Green Fodder.—"Subscriber," Handel, Iowa. A very full account of the ensilage of corn-fodder, which was referred to in October, 1873, was given in the *American Agriculturist* of June, 1875, with several illustrations explaining the process. This number can be had by sending 15 cents.

Rye as a Soiling Crop.—"W. A. C.," Wilmington, N. C. Rye is an excellent soiling crop. It may be sown at intervals from September until the middle of November, in the North, or later in the South. It should be cut when headed out and in the milk. It may be mown and cured as hay, if thought proper, when it makes excellent dry fodder, but should be cut into chaff before being fed.

Hoeing the Wheat Crop.—Nothing is more certain than that the wheat crop would be as much benefited by cultivation as corn or roots. By and by we shall find it necessary to sow wheat in drills, and to cultivate the space between the drills. Some time ago we described a cultivator specially designed for the wheat crop, known as the Travis wheat hoe, the invention of A. B. Travis, of Bronson, Mich. The past season this hoe has been tried in the field by some large wheat growers in Michigan, and one of these parties reports, that "although ground was hard and dry, yet the machine worked admirably. The hoes were kept between the drills of wheat by the attendant without any difficulty. Wheat can be hoed with horses as readily as corn, and as fast as it can be drilled, the implement having the same number of hoes as a drill, and when hoed it looks as much improved as a corn-field when dressed out with a cultivator. It does not destroy any larger percentage of the plants than a cultivator does in cultivating corn. Any person who can manage a plow well can manage a wheat-hoe. The work was witnessed by several of the largest farmers, one of whom was Powell Kellam, of Addison, who has 240 acres of wheat, and all pronounced it well done and a success. It prepares the soil nicely for the clover seed. We have been in the habit of harrowing our wheat, but hoeing is far preferable, because more effective."

Feeding Cotton-Seed.—"J. F. M.," Marion Co., Fla. Cotton-seed in the husk is not a wholesome food for cattle. The hard, woody husk is indigestible and irritable to the intestines, causing diarrhœa, or impaction of the rumen. The seed itself has a costive effect, and even when freed from the husk, should be fed with caution. The husk may easily be separated from the kernel by Kahnweiler's Cotton-Seed Huller, recently described in the *American Agriculturist*. This machine also breaks the kernels, and leaves them in very good condition to be fed.

Plow for Sod Land.—"W. A. C." The adamant plows, made by the New York Plow Company, Beekman St., N. Y., are excellent for plowing sod upon heavy land, or for any sort of plowing, as the mold-board will not clog in any soil. The metal is very hard, and has a bright polished surface. This plow was described and illustrated in the *American Agriculturist* for April, 1877.

Difficulty in Pigging.—"W. T. G.," Stevensville, Pa. The recently published book on "Swine Husbandry," by F. L. Coburn, is the most useful practical work on the subject. It is the book for the pig keeper whose business is making pork. It has little about the history and origin of swine, and other matters useful to few persons, but much about breeding, feeding, and caring for them, which is useful to every one who keeps a pig. The operation of removing pigs from a sow by means of the knife, is not a practicable one; the pigs may be saved, but the sow will be lost, and a litter of pigs without a mother is undesirable property.

A Persistent Weed—Bind-weed.—"A. G. C.," sends from Hunterdon Co., N. J., for name and information, a specimen of the European Bind-weed, *Convolvulus arvensis*. This is a perennial, small-flowered Morning-glory, which climbs upon other plants to the hight of about two feet, with halberd-shaped leaves, and pale-reddish flowers about half an inch across. In England this is regarded as one of the most difficult of all weeds to exterminate; it has abundant underground stems of which, when broken, every fragment will form a new plant. This is very much smaller than any of our native Bind-weeds, or Wild Morning-Glories, one of which is, in some localities, quite troublesome. If farmers and people generally, noticed plants more closely, and would detect at once an introduced weed, and on its first appearance, much future trouble would be avoided. Unfortunately it is not until a plant gets well spread and established, and its troublesome character calls attention to it, that its presence is noticed, and then it is only to be exterminated through long and difficult labor. Fortunately this plant is not widely naturalized, and occurs only near the coast, but wherever it is found it should be taken in hand at once, and not allowed to spread. It is an innocent looking, and even attractive little plant; but when it comes it comes to stay. Look out for it!

The "Traveller's Official Railway Guide," the information in which is furnished directly by the railway companies themselves, is a large volume filled with time-tables and other railroad matters, which comes to our office regularly, and which, as we have occasion to refer to it frequently, we find very useful. It is issued by the National Railway Publication Co., Philadelphia.

Dressing for Sore Teats on Cows.—"F. O. P.," Topeka, Kan. A good dressing for sore teats, is to apply clean, fresh lard with a few drops of turpentine stirred into it. The teats should be washed with warm water and soap previously. Grease the teats, and wipe them off before and after milking.

Pork-Making in Georgia.—We have on former occasions referred to the remarkable efficiency of the Commissioner of Agriculture for the State of Georgia, Doct. Thomas P. Janes, and we have before us another manifestation of his usefulness. Impressed by the fact that the State falls far short of producing sufficient pork for home consumption, and that 100,000,000 pounds of hog-products are annually purchased from abroad to supply the deficiency, the Commissioner first thoroughly investigated the present status of hog-raising in the State, learned as far as possible the reason of the deficiency, the faults in the present management, the kinds of food most profitable, and various other points. The results of his investigations, with much useful instruction, are embodied in a neat pamphlet of 100 pages, for the use of the farmers of the State.—Well done Georgia.

The St. Louis Fair has become one of the largest and most important Exhibitions in the country, and as we can not give the full data in our regular Fair List, we do so here. The Industrial portion will open on Monday, Sept. 10th. The Live Stock and Fruit, and Floral Departments, on Monday, Oct. 1st, and all departments close on Saturday, Oct. 6th. The grounds of the Association comprise 83 acres, and include a Zoological Garden of much interest; various improvements have been added this year, among which is a "Department of Public Comfort," similar to the one found so useful at the Centennial. Of course "that noble animal, the horse," will not be overlooked.

Selecting Seed Corn.—It has been frequently advised that before corn is cut up, one should go through the field and pick out those stalks which have borne two ears, and select these ears for future seed. This is very well if the two ears are perfect ones, but we have found it very rarely happens when one stalk bears two ears, that both ears are large, well filled out, and sufficiently good to be kept for seed. It is not wise, we think, to choose in this case the one good ear, and reject the poorer one, simply because the good ear is a twin. For there is a relationship between the two ears, and it is the whole plant, and not a part of its product only, that gives a character to that product. We would much rather take a long, sound, early ripened, heavy, plump, and well filled ear, although it be a single one, than one equally good, that has a poor nubbin on the same stalk. We do not know in the latter case whether or not the produce of the twin ear may revert to the poorer sort to which it is so closely related; while on the contrary, the single good ear would almost certainly produce good plants with equally good produce. We are content with one good ear to a stalk. If we could only secure that, we could safely expect over 100 bushels of shelled corn per acre, for with hills placed even 4x3 feet apart, and three stalks to a hill, we could then have 10,890 ears, which, if as good as the best we raise, would yield one bushel of corn to every 100 ears, and make 108 bushels per acre. When we reach this yield we ought to be satisfied. Therefore we would rather endeavor to procure one good ear to each stalk, without fail, and not, in trying to get two ears, run the risk of getting two bad ones.

Thumps in Young Pigs.—"W. B.," Columbus, Ga., sends the following method of treating young pigs for "thumps," which he has found successful. One pig of a litter four weeks old, was attacked first. Subsequently another of the same litter was similarly affected. As I killed a young pig in trying to force medicine down its throat, I thought it prudent to try another way. I begin to feed my sucking pigs at three weeks old, and as one, or two, won't eat alone, I gave the whole litter a dose each, (in as little food as possible, to insure their getting all the medicine), of castor oil, once a day for a week, with a dose of copperas every third day, and a little sulphur once or twice. In a week, the two sick pigs were entirely cured, and the whole litter improved by the treatment. If dust in the pen and yards is prevented, there will not be many cases of thumps.

Citric Acid.—"D. H.," Chicago, Ill. The manufacture of Citric Acid is carried on in England and in this country by manufacturing chemists, who make other chemical products. We have no means of knowing how profitable it is, nor have we any knowledge of a manufactory of this alone. The juice of lemons, limes, and citrons, is concentrated by evaporation, in the countries where the fruit grows, and sent abroad in casks to the manufacturers of the acid. We can only give an outline of the process, referring you to Muspratt's, or some other work on chemical manufactures, for details. We may remark that one entirely unused to chemical processes, would be very unlikely to meet with success, and that one undertaking a manufacture of this kind, should have a general knowledge of chemistry, in order to be able to overcome the difficulties he would be very sure to meet with. It would be much cheaper to engage a skilled foreman at the start. To make citric acid, the lime juice is first treated with prepared chalk, until it is neutralized, which is known by the ceasing of effervescence, when more chalk is added. The chalk, carbonate of lime, is decomposed; the carbonic acid escapes, and the lime, united with the citric acid, falls to the bottom as citrate of lime, which is not soluble in water. The citrate of

lime is collected, and thoroughly washed with warm water, to remove all impurities. It is then placed in a leaden vat, and treated with a proper amount of dilute sulphuric acid, and boiled; the sulphuric acid now unites with the lime, forming sulphate of lime, which is very slightly soluble, while the citric acid being set free, remains in solution. The sulphate of lime being separated by a cloth filter, the liquid is evaporated until sufficiently concentrated for the citric acid to separate in crystals. These have to be purified by dissolving in water, straining and crystalizing again, which process has to be repeated until they, the crystals, are pure and colorless.

Harvesting Buckwheat.—Buckwheat sown late in June, or early in July, will be ready for harvesting this month. This crop suffers very easily from even a light frost, and should be cut before frosts occur. As the grain does not ripen evenly while growing, some being green, and some hardly out of blossom, while the bulk of it is ready for harvest; one need not run the risk of being caught by a frost, but may cut the crop as soon as it is well loaded. Much of the immature grain will fill out and ripen after the crop is cut, and when the straw has been heavy, we have known the blossoms even to mature their seeds while standing in the stook. The grain should lay in the swath until dry enough to rake up, when it should be gathered into sheaves while damp with dew, to avoid shelling; the sheaves not being bound, but set up with the heads tangled and pressed together, in which condition they may remain until ready for thrashing. This crop is never housed, as it heats and spoils readily, and it must be treated with great care.

Losses by "Foot and Mouth" Disease.—This disease, also known as Epizoötic Aphtha, has resulted in almost incalculable loss to English breeders and farmers. Mr. T. C. Booth, the well-known English breeder of Short-horns, recently testified before a Parliamentary committee of inquiry, that his herd had suffered to the extent of from $200,000 to $250,000. It is the loss from this disease, which has so affected the English meat market, as to make exports from America possible and profitable.

Cattle and Sheep in Colorado.—In a most surprisingly short time Colorado comes to the front rank as a cattle and sheep producing State, from very small beginnings a few years ago. Recently there have been sent from Colorado to the New York market, some grade Short-horns, which can not be excelled by the best grades of Illinois and Kentucky. This is one outgrowth of what was called the Short-horn mania, and if the "mania" should have no worse effects than this, it will be easy to stand some more of the same kind. The good stock introduced in Colorado less than five years ago, have already produced from the common Texan cows, these excellent grades; the country is well filled with equally good stock, and the supply will increase in quantity and quality. At the same time we notice reports of a public sheep-shearing, which show not only that Colorado possesses most excellent sheep, but that her Merinos are of a kind that class highly as mutton sheep. For instance, at the shearing referred to in El Paso County, among the sheep shorn were rams of the following weight of carcass and fleece, viz., of Col. Phillips' flocks, rams weighing 91, 94, 96, 97, 98, and 118 lbs., the fleeces weighing respectively 17¼, 20¼, 16, 17½, 18, and 17½ lbs.; of Willard Bros.' flock, rams weighing 135, 142, 143, and 156 lbs., with fleeces weighing 20, 23, 18¼, 21, and two 3-year old rams of lighter carcass sheared 24½ and 33½ lbs. of wool. Such rams as these must leave their mark on the Colorado flocks.

The Ayrshire (Scotch) Herd-Book.—The first volume of the Scotch Ayrshire Herd-book is in course of preparation. It is announced that entries may now be made at a charge of five shillings sterling, $1.25, for bulls, and half as much for cows and heifers.

Polled Galloway Herd-Book.—An association of breeders of Galloway cattle has been formed, and a herd-book for the registration of pure-bred animals has been published. The association has taken the name of the "Galloway Cattle Society," (which might more properly and grammatically have been called the Galloway Cattle Breeders' Society,) with the Duke of Buccleuch as President, and the Earl of Galloway as Vice-president.

Trees in the City of London.—The "Gardener's Magazine," of June 30th, gives a list of the trees now growing in the City of London proper. From this it appears that there are only about 200, in 30 species and varieties, and these are mostly in old church-yards, and the courts of public buildings. The list is noticeable for the absence of all cone-bearing trees; the Oriental Plane (or Button-ball as we call its American brother), the Linden and Balsam Poplar being most numerous.

State, County, and other Fairs in 1877.

State and Industrial Fairs.

American Institute	New York	Sept. 12-Nov. 12
American Pomological	Baltimore	Sept. 12-14
California	Sacramento	Sept. 17-22
Chicago Industrial Ex.	Chicago, Ill	Aug. 29-Oct. 13
Georgia	Atlanta	Oct. 15-20
Illinois	Freeport	Sept. 17-22
Indiana	Indianapolis	Sept. 24-29
Iowa	Cedar Rapids	Sept. 17-22
Kentucky	North Florence	Aug. 28-31
Maine Dairymen	Orono	Sept. 18-20
Maine Pomological	Waterville	Sept. 25-28
Michigan	Jackson	Sept. 17-22
Minnesota	Minneapolis	Sept. 3- 8
Missouri	Kansas City	Sept. 17-22
National Ag'l Congress	Chicago, Ill	Sept. 25-27
Nebraska	Lincoln	Sept. 24-28
Nevada	Reno	Oct. 15-20
Newburgh Bay Hort'l	Newburgh	Sept. 26-28
New England	Portland	Sept. 3- 7
New Jersey	Waverley	Sept. 17-22
New York	Rochester	Sept. 17-21
Northwest Exposition	Dubuque	Sept. 10-14
Rhode Island Ag'l Soc.	Woonsocket	Oct. 2- 3
Ohio	Columbus	Sept. 10-14
Oregon	Salem	Oct. 8-13
Quincy Horse Fair	Quincy, Ill	Sept. 4- 7
St. Joseph Agr'l Ex'n	St. Joseph, Mo	Sept. 10-16
St. Louis	St. Louis, Mo	Oct. 1- 6
St. Louis Indus'l Exp'n	St. Louis, Mo	Sept. 10-Oct. 6
Shenandoah Valley	Winchester, Va	Oct. 9-12
Texas	Austin	Oct. 16-20
Virginia	Richmond	Oct. 30-Nov. 4
West Virginia	Clarksburg	Sept. 12-14
Wisconsin	Janesville	Sept. 10-14
Worcester Hort. Soc'y	Worcester, Mass.	Sept. ——

PROVINCIAL FAIRS.

Nova Scotia	Kentville	Oct. 1- 5
Ontario	London	Sept. 24-28
Quebec	Quebec	Sept. 18-21

District Fairs.

Ohio, Central	Mechanicsburg	Sept. 5- 7
Ohio, Central	Orrville	Oct. 10-13
Kentucky North	Florence	Aug. 28-31
Ohio, Southern	Dayton	Sept. 24-28
Indiana, Northeastern	Waterloo	Oct. 2- 5
Indiana, Southeastern	Aurora	Sept. 4- 7
Iowa, Northwest	Dubuque	Sept. 10-14
Iowa, Northern	Pottsville	Oct. 2- 5
Michigan, Central	Lansing	Oct. 2- 5
Wisconsin Central	Watertown	Sept. 24-28
Wisconsin Northwest	Oshkosh	Sept. 24-28

County and Town Fairs.

MAINE.

Androscoggin	Lewiston	Oct. 2- 4
Franklin	Farmington	Oct. 10-12
Franklin Central	Strong	Oct. 3- 4
Kennebec	Readfie'd	Oct. 2- 4
Penobscot	Orono	Sept. 18-20
Piscataquis East	Milo	Sept. 26-27
Sagadahoc	Topsham	Oct. 9-11
Somerset Central	Skowhegan	Sept. 18-20
Washington	Pembroke	Sept. 26-27

NEW HAMPSHIRE.

Stratford	Great Falls	Sept. 11-13

VERMONT.

Caledonian	——	Sept. 18-20
Chittenden	Essex Junction	Sept. ——
Contoocook Valley	Hillsboro Bridge	Sept. 11-12
Franklin	Sheldon	Sept. 19-21
Washington	Montpelier	Sept. 11-13
Windham	Newfane	Sept. 12-13
Windsor	Woodstock	Sept. 25-27

MASSACHUSETTS.

Barnstable	Barnstable	Sept. 18-19
Berkshire	Pittsfield	Oct. 2- 4
Bristol	Taunton	Sept. 25-27
Bristol Center	Myrick's	Sept. 12-14
Brockton	Brockton	Oct. 3- 5
Deerfield Valley	Charlemont	Sept. 13-14
Essex	Lawrence	Sept. 25-26
Franklin	Greenfield	Sept. 27-29
Hampden	Springfield	Sept. 25-26
Hampden, East	Palmer	Sept. 18-19
Hampshire	Amherst	Sept. 18-19
Hampshire, Franklin, etc.	Northampton	Oct. 3- 5
Hanson	Hanson	Sept. 25-26
Highland	Middlefield	Sept. 13-14
Hingham	Hingham	Sept. 26-27
Hoosac Valley	North Adams	Sept. 18-19
Housatonic	Great Barrington	Sept. 26-28
Marshfield	Marshfield	Oct. 3- 5
Martha's Vineyard	West Tisbury	Oct. 2- 3
Middlesex	Concord	Sept. 27-29
Middlesex, North	Lowell	Sept. 25-26
Middlesex, South	Framingham	Sept. 18-19
Nantucket	Nantucket	Sept. 5- 6
Norfolk	Readville	Sept. 27-28
Plymouth	Bridgewater	Sept. 19-21
Union	Blandford	Sept. 19-21
Worcester	Worcester	Sept. 20-21
Worcester, North	Fitchburg	Sept. 25
Worcester, Northwest	Athol	Oct. 2- 3
Worcester, South	Sturbridge	Sept. 13-14
Worcester, Southeast	Milford	Sept. 25-27
Worcester, West	Barre	Sept. 27-28

RHODE ISLAND.

Washington	Kingston	Sept. 18-20
Woonsocket	Woonsocket	Oct. 2- 4

CONNECTICUT.

Danbury Town	Danbury	Oct. 2- 6
Fairfield	Norwalk	Sept. 18-22
New Haven	Meriden	Sept. 19-21
Windham	Brooklyn	Sept. 18-20
Woodstock	Woodstock	Sept. 10-12

NEW YORK.

Alleghany	Angelica	Oct. 2 -4
Cattaraugus	Randolph	Sept. 12-14
Cayuga	Auburn	Sept. 11-13
Chautauqua	Jamestown	Sept. 18-21
Chemung	Elmira	Sept. 26-29
Chenango	Sherburne	Sept. 13-15
Columbia	Chatham	Sept. 19-21
Cortland	——	Sept. 12-13
Delaware	Delhi	Sept. 11-13
Essex	Westport	Sept. 11-13
Franklin	Malone	Sept. 25-27
Fulton	Johnstown	Sept. 17-19
Genesee	Batavia	Sept. 7- 8
Greene	Cairo	Sept. 19-20
Hamilton	Earlville	Sept. 19-21
Herkimer	Winfield	Sept. 4- 6
Jefferson	Watertown	Sept. 11-13
Lewis	Lowville	Sept. 11-14
Livingston	Geneseo	Sept. 26 27
Madison	Lennox	Sept. 25-28
Niagara	Lockport	Sept. 20-22
Onondaga	Manlius	Sept. 26-28
Oneida	Booneville	Sept. 5- 7
Oneida	Rome	Sept. 17-21
Oneida	Taberg	Sept. 24-26
Oneida	Trenton	Sept. 25-27
Oneida	Waterville	Sept. 24-25
Ontario	Canandaigua	Sept. 25-27
Orange	Montgomery	Sept. 26-28
Orleans	Albion	Sept. 21-22
Oswego	Fulton Station	Sept. 18-20
Oswego	Mexico	Sept. 11-13
Oswego	Phœnix	Sept. 11-13
Otsego	Edmeston	Sept. 11-13
Otsego	Oneonta	Sept. 11-13
Otsego	Schenevus	Sept. 20-22
Otsego	Unadilla	Sept. 12-14
Queens	Mineola	Oct. 2- 4
Richland	Sandy Creek	Sept. 5- 7
Rockland	Spring Valley	Sept. 26-28
St. Lawrence	Gouverneur	Aug. 29-31
St. Lawrence	Potsdam	Sept. 18-20
Saratoga	Saratoga Springs	Sept. 18-21
Schenectady	Schenectady	Sept. 25-28
Schoharie	Schoharie	Sept. 25-27
Schuyler	Watkins	Sept. 20-22
Seneca	Ovid	Oct. 2- 4
Steuben	Bath	Sept. 26-28
Suffolk	Riverhead	Sept. 25-27
Tioga	Owego	Sept. 26-28
Tompkins	Ithaca	Sept. 11-13
Warren	Glen's Falls	Sept. 11-14
Warren	Warrensburg	Sept. 11-14
Washington	Sandy Hill	Sept. 4- 7
Wayne	Lyons	Sept. 26-28
Yates	Rushville	Sept. 27-28

NEW JERSEY.

Atlantic	Egg Harbor City	Sept. 24-25
Burlington	Mt. Holly	Oct. 9-11
Monmouth	Freehold	Sept. 11-13
Warren	Belvidere	Sept. 11-14

PENNSYLVANIA.

Bradford, East	Towanda	Sept. 25-27
Bradford	Troy	Sept. 13-14
Bucks	Doylestown	Oct. 2- 5
Bucks	Kutstown	Sept. 18-21
Chester	Westchester	Sept. 20-22
Columbia	Bloomsburg	Oct. 10-12
Mifflin	Lewistown	Sept. 25-28
Washington	Cannonsburg	Sept. 25-27

OHIO.

Allen	Lima	Sept. 18-21
Ashtabula	Jefferson	Sept. 25-28
Athens	Athens	Oct. 4- 5
Belmont	St. Clairsville	Sept. 19-21
Brown	Georgetown	Sept. 11-14
Butler	Hamilton	Oct. 1-
Carroll	Carrollton	Oct. 10-12
Champaign	Urbana	Sept. 22-28
Clarke	Springfield	Aug. 21-24
Clermont	Boston	Sept. 4- 7
Clinton	Wilmington	Sept. 4- 7
Columbiana	New-Lisbon	Sept. 25-27
Coshocton	Coshocton	Sept. 25-29
Crawford	Bucyrus	Sept. 25-
Cuyahoga	Cleveland	Sept. 11-13
Darke	Greenville	Sept. 18-21
Defiance	Defiance	Sept. 18-21
Delaware	Delaware	Sept. 26-28
Erie	Sandusky	Sept. 25-28
Fairfield	Lancaster	Oct. 10-13
Fulton	Wauseon	Sept. 19-21
Gallia	Gallipolis	Sept. 26-28
Geauga	Burton	Sept. 24-26
Greene	Xenia	Sept. 5- 7
Guernsey	Cambridge	Sept. 18-20
Hamilton	Carthage	Sept. 4- 7
Hancock	Findlay	Oct. 3- 6
Hardin	Kenton	Sept. 25-29
Harrison	Cadiz	Oct. 2- 4
Hocking	Logan	Oct. 3- 6
Holmes	Millersburg	Oct. 2- 5
Jackson	Jackson C. H.	Sept. 13-15
Jefferson	Smithfield	Sept. 26-28
Knox	Mt. Vernon	Sept. 25-27
Lake	Painesville	Sept. 26-28
Lawrence	Ironton	Sept. 18-21
Licking	Newark	Oct. 2- 8
Logan	Bellefontaine	Oct. 2- 4
Lorain	Elyria	Sept. 19-21
Lucas	Toledo	Sept. 18-21
Mahoning	Canfield	Oct. 2- 4
Marion	Marion	Oct. 2-10
Medina	Medina	Sept. 18-20
Meigs	Pomeroy	Sept. 14-15
Miami	Troy	Sept. 18-21
Morgan	McConnellsville	Sept. 18-21
Morrow	Mt. Gilead	Oct. 2- 5
Muskingum	Zanesville	Sept. 4- 8
Ottawa	Port Clinton	Oct. 9-11
Paulding	Paulding	Sept. 26-28
Perry	New Lexington	Sept. 26-28
Pickaway	Circleville	Sept. 26-28
Portage	Ravenna	Sept. 25-27
Putnam	Ottawa	Sept. 25-28
Richland	Mansfield	Sept. 18-21
Ross	Chillicothe	Sept. 4- 7

Sandusky	Fremont	Oct. 2- 5
Seneca	Tiffin	Oct. 3- 5
Shelby	Sidney	Sept. 18-21
Stark	Canton	Oct. 10-13
Summit	Akron	Oct. 2- 5
Trumbull	Warren	Sept. 18-21
Tuscarawas	Canal Dover	Sept. 25-28
Union	Marysville	Oct. 2- 5
Warren	Lebanon	Sept. 19-21
Washington	Marietta	Sept. 26-28
Wayne	Orrville	Oct. 10-13
Wayne	Wooster	Sept. 26-28
Williams	Bryan	Sept. 26-28
Wood	Tontogany	Sept. 25-28

INDIANA.

Allen	Fort Wayne	Sept. 10-14
Barber	Worthington	Sept. 4- 8
Boone	Lebanon	Oct. 2- 5
Bridgeton Union	Bridgeton	Aug. 27-31
Cass	Logansport	Sept. 10-15
Clarke	Charlestown	Sept. 11-13
Clinton	Frankfort	Sept. 10-14
Daviess	Washington	Sept. 11-15
Delaware	Muncie	Sept. 11-14
Dunkirk Union	Dunkirk	Sept. 4- 7
Edinburg Union	Edinburg	Sept. 18-22
Elkhart	Goshen	Oct. 2- 5
Fountain, War'n & Ver.	Covington	Sept. 25-28
Fulton	Rochester	Oct. 4- 6
Gibson	Princeton	Sept. 17-21
Greene	Linton	Oct. 1- 5
Hamilton	Cicero	Aug. 28-31
Harrison	Corydon	Sept. 11-14
Hendricks	Danville	Sept. 4- 7
Henry, Mad'n & Del'e.	Middle Fork	Aug. 14-17
Henry	Newcastle	Aug. 21-24
Huntington	Huntington	Sept. 18-21
Jasper	Rensselaer	Sept. 18-21
Jay	Portland	Sept. 25-28
Kingstown Union	Kingstown	Aug. 28-31
Knox	Vincennes	Oct. 8-13
La Grange	La Grange	Sept. 25-28
Laporte	Laporte	Sept. 19-21
Marion	Valley Mills	Sept. 6- 8
Miami	Peru	Sept. 18-21
Middle Fork	Middletown	Aug. 27-31
Mitchell District	Mitchell	Sept. 25-29
Morgan	Martinsville	Sept. 11-14
Noble	Ligonier	Sept. 19-21
Orange	Paoli	Sept. 25-29
Perry	Rome	Oct. 3- 6
Pike	Petersburg	Sept. 3- 7
Porter	Valparaiso	Sept. 25-28
Prairie Farmer	Francesville	Oct. 2- 5
Putnam	Greencastle	Aug. 27-31
Randolph	Winchester	Sept. 18-21
Remington Union	Remington	Aug. 28-31
Ripley	Osgood	Aug. 14-17
Rush	Rushville	Sept. 11-14
Russellville Union	Russellville	Aug. 20-24
Steuben	Angola	Oct. 9-12
Switzerland & Ohio	East Enterprise	Sept. 11-14
Thornton Union	Thornton	Sept. 17-22
Tippecanoe	Lafayette	Sept. 3- 8
Vermillion	Newport	Sept. 11-14
Wabash	Wabash	Sept. 11-14
Warren	West Lebanon	Sept. 10-15

ILLINOIS.

Adams	Camp Point	Sept. 4- 7
Boone	Belvidere	Sept. 25-28
Brown	Mt. Sterling	Sept. 25-28
Bureau	Princeton	Sept. 11-14
Carroll	Mt. Carroll	Sept. 4- 7
Cass	Virginia	Aug. 28-31
Champaign	Champaign	Sept. 3- 6
Christian	Taylorville	Sept. 18-21
Clark	Marshall	Sept. 19-21
Clay	Flora	Sept. 25-28
Clinton	Carlisle	
Coles	Charleston	Sept. 11-15
Crawford	Robinson	Oct. 2- 5
Cumberland	Majority Point	Oct. 3- 6
De Kalb	Sycamore	Sept. 25-27
De Witt	Clinton	Aug. 14-17
Douglas	Tuscola	Sept. 4- 8
Du Page	Wheaton	Sept. 12-14
Edgar	Paris	Sept. 4- 7
Edwards	Albion	Oct. 2- 5
Fayette	Vandalia	Sept. 19-21
Ford	Paxton	Sept. 11-14
Franklin	Benton	Sept. 25-28
Fulton	Avon	Sept. 25-28
Fulton	Canton	Oct. 9-12
Gallatin	Shawneetown	Sept. 25-28
Greene	Carrollton	Oct. 16-19
Grundy	Morris	Sept. 25-28
Hamilton	McLeansboro	
Hardin	Elizabethtown	Sept. 26-29
Henderson	Biggsville	Oct. 2- 5
Henry	Cambridge	Aug. 27-31
Iroquois	Onargo	Sept. 4- 7
Jackson	Murphysboro	Oct. 9-12
Jasper	Newton	Sept. 25-28
Jersey	Jerseyville	Oct. 9-12
Jo Daviess	Galena	Sept. 25-28
Jo Daviess	Warren	Oct. 2 -5
Kane	Aurora	Sept. 4- 7
Kankakee	Kankakee	Sept. 25-28
Kendall	Bristol	Sept. 11-13
Knox	Knoxville	Oct. 2- 5
Lake	Libertyville	Sept.
Lake	Waukegan	Oct. 1- 6
La Salle	Ottawa	Sept. 3- 8
Lawrence	Lawrenceville	Sept. 26-29
Lee	Dixon	Sept. 11-13
Livingston	Pontiac	Sept. 4- 7
Livingston	Fairbury	Sept. 11-14
Logan	Atlanta	Aug. 27-31
Logan	Lincoln	Aug. 20-25
Macon	Decatur	Sept. 11-14
Macoupin	Carlinville	Sept. 4- 8
Marion	Centralia	Sept. 24-27
Marshall	Wenona	Sept. 24-28
Mason	Havana	Sept. 25-28
Massac	Metropolis	Oct. 10-13
McDonough	Macomb	Aug. 27-Sept. 1
McHenry	Marengo	Sept. 4- 7
McHenry	Woodstock	Oct. 2- 5
McLean	Bloomington	Sept. 4- 7
Menard	Petersburg	Sept. 4- 7
Mercer	Aledo	Sept. 25-28
Montgomery	Hillsboro	Sept. 25-28
Morgan	Jacksonville	Sept. 10-14
Ogle	Rochelle	Sept. 24-29
Ogle	Oregon	Sept. 4- 7
Peoria	Peoria	Sept. 11-14
Perry	Pinckneyville	Oct. 3- 5
Piatt	Monticello	Aug. 14-17
Pike	Pittsfield	Sept. 25-28
Pope	Golconda	Oct. 3- 6
Putnam	Hennepin	Sept. 4- 6
Randolph	Sparta	Sept. 26-28
Randolph	Chester	Oct. 16-19
Rock Island	Hillsdale	Sept. 13-15
Sangamon	Springfield	Sept. 24-29
Schuyler	Rushville	Oct. 3- 5
Shelby	Shelbyville	Sept. 25-28
Stark	Toulon	Sept. 25-28
St. Clair	Belleville	Sept. 4- 7
Union	Jonesboro	Sept. 11-14
Vermillion	Catlin	Sept. 26-28
Vermillion	Danville	Sept. 18-22
Vermillion	Hoopeston	Aug. 27-31
Warren	Monmouth	Sept. 11-14
Wayne	Fairfield	Sept. 18-21
Whiteside	Albany	Sept. 12-14
Whiteside	Sterling	Sept. 25-28
Will	Joliet	Sept. 10-14
Williamson	Marion	Oct. 2- 4
Winnebago	Rockford	Sept. 11-14

MICHIGAN.

Bay	Bay City	Sept. 18-21
Berrien	Niles	Oct. 2- 5
Branch	Coldwater	Sept. 25-28
Central	Hubbardston	Sept. 25-28
Clinton	St. Johns	Sept. 12-14
Eaton	Charlotte	Sept. 26-28
Genesee	Flint	Oct. 2- 5
Grand Traverse	Traverse City	
Hillsdale	Hillsdale	Oct. 2- 5
Ingham	Mason	Sept. 26-28
Ionia	Ionia	Sept. 17-21
Kalamazoo	Kalamazoo	Sept. 26-29
Kent	Grand Rapids	Sept. 25-27
Lenawee	Adrian	Sept. 26-28
Livingston	Howell	Sept. 25-28
Macomb	Armada	Oct. 3- 5
Macomb	Mt. Clemens	Sept. 25-27
Monroe	Monroe	Oct. 2- 5
Oakland	Pontiac	Sept. 26-28
Saginaw	Saginaw City	Sept. 11-14
Sanilac	Lexington	Oct. 9-10
Shiawassee	Owosso	Sept. 26-28
Van Buren	Paw Paw	Oct. 2- 5

WISCONSIN.

Dodge	Juneau	Sept. 18-20
Fon du Lac	Fon du Lac	Sept. 18-20
Jefferson	Jefferson	Sept. 18-21
Sheboygan	Sheboygan Falls	Sept. 19-21

IOWA.

Allamakee	Waukon	Sept. 10-14
Appanoose	Centreville	Sept. 4- 6
Black Hawk	East Waterloo	Sept. 26-28
Bremer	Waverley	Sept. 25-26
Buchanan	Independence	Oct. 2- 5
Cedar	Tipton	Oct. 2- 4
Cherokee	Cherokee	Oct. 4- 6
Chickasaw	New Hampton	Sept. 26-28
Clarke	Osceola	Sept. 5- 7
Clayton	McGregor	Sept. 19-21
Crawford	Denison	Sept. 26-28
Decatur	Leon	Sept. 12-14
Delaware	Manchester	Sept. 25-28
Des Moines	Burlington	Sept. 25-28
Fayette	West Union	Sept. 27-29
Franklin	Hampton	Sept. 26-28
Greene	Jefferson	Sept. 13-15
Hardin	Eldora	Sept. 25-28
Henry	Mt. Pleasant	Sept. 11-14
Iowa	Marengo	Sept. 11-14
Jasper	Newton	Sept. 25-27
Johnson	Iowa City	Sept. 25-28
Jones	Monticello	Sept. 4- 7
Lee	West Point	Sept. 18-21
Louisa	Wapello	Sept. 25-28
Lucas	Chariton	Sept. 25-27
Lyon	Rock Rapids	Oct. 3- 5
Madison	Winterset	Sept. 11-14
Mahaska	Oskaloosa	Aug. 28-31
Marshall	Marshalltown	Sept. 11-13
Monroe	Albia	Sept. 26-28
Muscatine	Muscatine	Sept. 25-28
O'Brien	Primghar	
Page	Clarinda	Sept. 18-21
Plymouth	Le Mars	Sept. 26-28
Ringgold	Mt. Ayr	Sept. 12-14
Scott	Davenport	Sept. 3- 6
Taylor	Bedford	Sept. 26-29
Union	Mechanicsville	Sept. 25-28
Union	West Liberty	Sept. 11-14
Van Buren	Keosauqua	Sept. 18-22
Washington	Washington	Oct. 2- 5
Winneshiek	Decorah	Sept. 18-20

MISSOURI.

Newton	Neosha	Sept. 26-28
Washington	West Bend	Oct. 2- 4

KENTUCKY.

Anderson	Lawrenceburg	Aug. 14
Boone	Florence	Aug. 28
Bourbon	Paris	Sept. 4
Boyle	Danville	Aug. 8
Fayette	Lexington	Sept. 11
Franklin	Frankfort	Sept. 4
Harrison	Cynthiana	Aug. 31
Henry	Eminence	Aug. 22
Madison	Richmond	Aug. 13
Montgomery	Mt. Sterling	Sept. 8
Nelson	Bardstown	Sept. 4
Owen	Owenton	Oct. 2
Shelby	Shelbyville	Aug. 7

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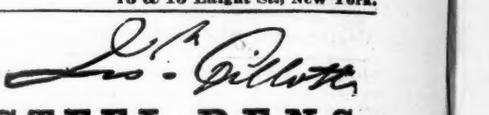

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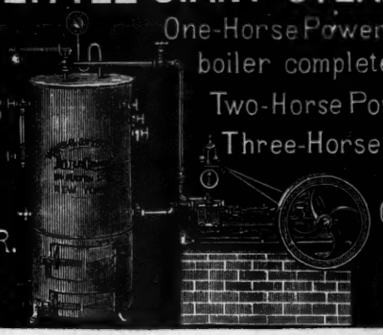

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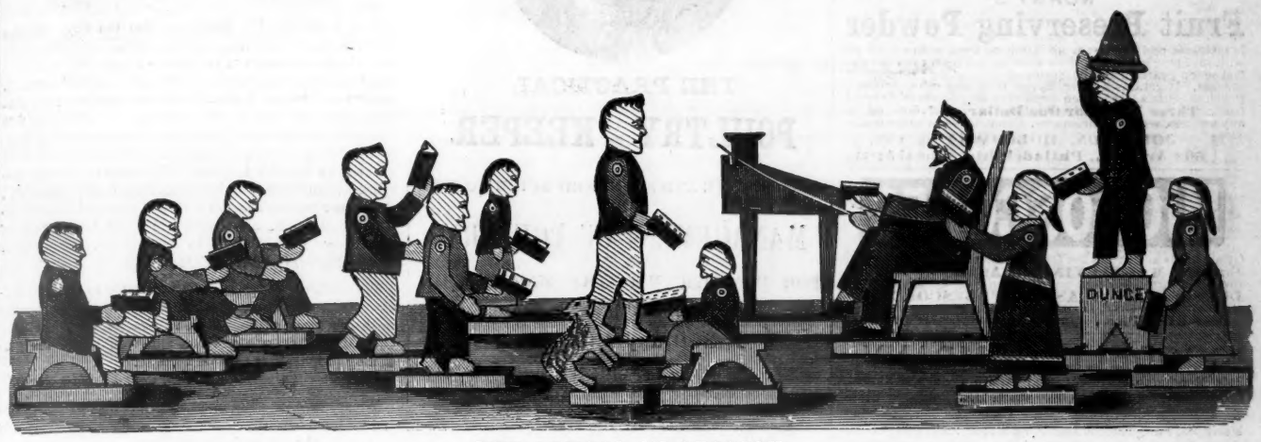

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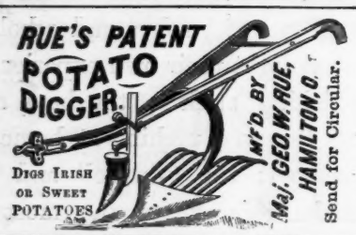

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[HORACE GREELEY in the *N. Y. Tribune.*

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